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Five-Year Review Report

FINAL

Second Five-Year Review Report

for

National Presto Industries and the Eau Claire Municipal Well Field

Superfund Sites

Eau Claire, Wisconsin

September 2002

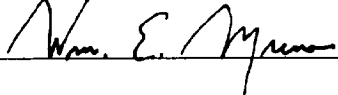
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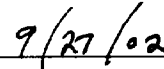
Region 5

Chicago, Illinois

Approved by:



Date:



Five-Year Review Summary Form

SITE IDENTIFICATION		
Site name (from WasteLAN): Eau Claire Municipal Well Field		
EPA ID (from WasteLAN): WID 980820054		
Region: 5	State: WI	City/County: Eau Claire/ Eau Claire and Chippewa Counties
SITE STATUS		
NPL status: <input checked="" type="checkbox"/> Final <input type="checkbox"/> Deleted <input type="checkbox"/> Other (specify) _____		
Remediation status (choose all that apply): <input type="checkbox"/> Under Construction <input type="checkbox"/> Operating <input checked="" type="checkbox"/> Complete		
Multiple OUs?: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Construction completion date: 09 / 21 / 1999	
Has site been put into reuse? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO - part of the site		
REVIEW STATUS		
Lead agency: <input checked="" type="checkbox"/> EPA <input type="checkbox"/> State <input type="checkbox"/> Tribe <input type="checkbox"/> Other Federal Agency _____		
Author name: Sheri L. Bianchin		
Author title: Remedial Project Manager	Author affiliation: U.S. EPA	
Review period: 3 / 4 / 2002 to 9 / 27 / 2002		
Date(s) of site inspection: July 2, 2002		
Type of review: <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <input checked="" type="checkbox"/> Post-SARA <input type="checkbox"/> Pre-SARA <input type="checkbox"/> NPL-Removal only </div> <div style="display: flex; justify-content: space-between; margin-top: 2px;"> <input type="checkbox"/> Non-NPL Remedial Action Site <input type="checkbox"/> NPL State/Tribe-lead </div> <div style="display: flex; justify-content: space-between; margin-top: 2px;"> <input type="checkbox"/> Regional Discretion </div>		
Review number: <input type="checkbox"/> 1 (first) <input checked="" type="checkbox"/> 2 (second) <input type="checkbox"/> 3 (third) <input type="checkbox"/> Other (specify) _____		
Triggering action: <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <input type="checkbox"/> Actual RA Onsite Construction at OU # _____ <input type="checkbox"/> Actual RA Start at OU# _____ </div> <div style="display: flex; justify-content: space-between; margin-top: 2px;"> <input type="checkbox"/> Construction Completion <input checked="" type="checkbox"/> Previous Five-Year Review Report </div> <div style="display: flex; justify-content: space-between; margin-top: 2px;"> <input type="checkbox"/> Other (specify) _____ </div>		
Triggering action date (from WasteLAN): 9 / 29 / 1997		
Due date (five years after triggering action date): 09 / 29 / 2002		

* ["OU" refers to operable unit.]

** [Review period should correspond to the actual start and end dates of the Five-Year Review in WasteLAN.]

Five-Year Review Summary Form, cont'd.**Issues:**

- Small containers of solvents were stored in the treatment building which is near the in fluent to the air stripping towers because the towers were being painted

Recommendations and Follow-up Actions:

- Continue to operate the air strippers at the well field.
- Remove containers of solvents from the building

Protectiveness Statement(s):

With the continued operation of the remedial action consisting of operation of the air stripper, and the continuation of the groundwater monitoring program pursuant to the ROD and approved O & M Plan, the remedies selected for the ECMWF site remain protective of human health and the environment.

Other Comments:

See also recommendations for the National Presto Industries, Inc. (NPI) Site.

Five-Year Review Summary Form

SITE IDENTIFICATION		
Site name (from WasteLAN): National Presto Industries, Inc.		
EPA ID (from WasteLAN): WID 006196174		
Region: 5	State: WI	City/County: Eau Claire/ Eau Claire and Chippewa Counties
SITE STATUS		
NPL status: <input checked="" type="checkbox"/> Final <input type="checkbox"/> Deleted <input type="checkbox"/> Other (specify) _____		
Remediation status (choose all that apply): <input type="checkbox"/> Under Construction <input type="checkbox"/> Operating <input checked="" type="checkbox"/> Complete		
Multiple OUs? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Construction completion date: 9 / 21 / 1999	
Has site been put into reuse? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO - part of the site		
REVIEW STATUS		
Lead agency: <input checked="" type="checkbox"/> EPA <input type="checkbox"/> State <input type="checkbox"/> Tribe <input type="checkbox"/> Other Federal Agency _____		
Author name: Sheri L. Bianchin		
Author title: Remedial Project Manager	Author affiliation: U.S. EPA	
Review period: 3/4 /2002 to 9/29/2002		
Date(s) of site inspection: July 1, 2002		
Type of review: <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <input checked="" type="checkbox"/> Post-SARA <input type="checkbox"/> Pre-SARA <input type="checkbox"/> NPL-Removal only </div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <input type="checkbox"/> Non-NPL Remedial Action Site <input type="checkbox"/> NPL State/Tribe-lead </div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <input type="checkbox"/> Regional Discretion </div>		
Review number: <input type="checkbox"/> 1 (first) <input checked="" type="checkbox"/> 2 (second) <input type="checkbox"/> 3 (third) <input type="checkbox"/> Other (specify) _____		
Triggering action: <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <input type="checkbox"/> Actual RA Onsite Construction at OU # _____ <input type="checkbox"/> Actual RA Start at OU# _____ </div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <input type="checkbox"/> Construction Completion <input checked="" type="checkbox"/> Previous Five-Year Review Report </div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <input type="checkbox"/> Other (specify) _____ </div>		
Triggering action date (from WasteLAN): 9 /25 /1998		
Due date (five years after triggering action date): 09 /25 / 03		

* ["OU" refers to operable unit.]

** [Review period should correspond to the actual start and end dates of the Five-Year Review in WasteLAN.]

Five-Year Review Summary Form, cont'd.

Issues:

- Burrowing animals were observed to have left minor tunnels in cap on the MRDS, several areas were eroded. Some of the cap area on the MRDS need to be revegetated;
- A number of groundwater monitoring wells need to be labeled/repared;
- No apparent objective criteria are in-place for efficiently evaluating groundwater monitoring data;
- VOC concentrations have recently increased in three monitoring wells (by MW-34A, MW- 70A, and MW-70B) in the Southwest Corner;
- Completion of Lagoon #2 and Loading Dock area removals need to be documented;
- Deed restrictions are not yet verified to be in place; the actual types of restrictions needs to be further refined and then secured.

Recommendations and Follow-up Actions:

- Repair landfill cap and revegetate;
- Investigate area in southwest corner and recommend action if necessary;
- Modify ground water monitoring program and reporting
- Finalize documentation of completion of Lagoon #2 and Loading Dock area removals
- Further refine areas subject to deed restrictions, secure deed restrictions and report to agencies
- Deed restrictions will be put in place after the WDNR finalizes their reviews and issue decions on the closure of the units.

Also, recommend continued operation of the remedial action components which were a part of the interim and full site-wide remedy by limiting access to the Site; operation of the extraction wells and the cascade aerator; performing groundwater monitoring; continued operation of the SVE system and maintenance of the cap along with maintaining all the remedial components according to the approved O & M Plan, and following up on the newly-identified areas of contamination, and instituting the deed restrictions, the remedy for the NPI Site remains protective of human health and the environment.

**National Presto Industries NPL Site
Five-Year Review Summary Form, cont'd.**

The selected remedies for both sites have been implemented and are protective of human health and the environment. Over the last five years, waste forge compound and contaminated soils have been removed from the east extension of Lagoon #1, Drywells #2 and #5, the Drainage Ditch, the southwest property corner, the southwest corner of Lagoon #2, the loading dock area, and the EDS. An SVE system and multi-layer cap at the MRDS have been installed and are operating as designed; organic compounds in the groundwater; the groundwater pump-and-treat systems at the MRDS and Southwest Corner have been operated continuously and have been effective in controlling and capturing the contaminated groundwater. WET tests of the effluent have demonstrated that the effluent is not toxic to aquatic organisms. These remedial actions have been implemented pursuant to the RODs and the recommendations of the last Five-Year Reviews for these sites.

The remedy at all site areas currently protects Human Health and the Environment because of the following:

- * Access to the site is restricted;

Much of the source areas have either been removed or consolidated and contained at the Melby Road Disposal Site;

- * The soil vapor extraction system and the cap over the Melby Road Disposal Site continues to contain the hazardous and non-hazardous waste on-site, and protect the groundwater from further degradation;
- * The groundwater monitoring program monitors the groundwater to assure that the remedy is effective and to detect whether any new release have occurred;
- * Continuing O & M per the approved plans.

New information has become available in several areas of the site since the last five-year review which has prompted actions at several areas. These areas have either been addressed or are being addressed through investigation and appropriate action.

Long-term protectiveness will be achieved by ensuring that the following actions take place:

- * Continued operation of the remedial action components including the continued operation of the extraction wells, cascade aerators, and soil vapor extractions system;
- * Continued groundwater sampling, and continued operation and maintenance of all components.
- * Other necessary follow-ups include repair of the monitoring well network, repair of several areas on the cap, and clarifying the types of restrictions required by the RODs and post-ROD actions and securing the deed restrictions;

Because the remedial actions at all the site areas are protective, the site is protective of human health and the environment.

With the continued operation of the remedial action components which were a part of the interim and full site-wide remedy by limiting access to the Site; operation of the extraction wells and the cascade aerator; performing groundwater monitoring; continued operation of the SVE system and maintenance of the cap along with maintaining all the remedial components according to the approved O & M Plan, and following up on the newly-identified areas of contamination, and instituting the deed restrictions, the remedy for the NPI Site remains protective of human health and the environment.

Other Comments:

See also recommendations for the Eau Claire Municipal Well Field (ECMWF) Site.

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APPENDIX A - Photographs from Field Inspections

APPENDIX C - Pretreatment Facilities Evaluation Report of the VOC Stripping Towers

APPENDIX D - WDNR Concurrence to Requests for No Further Remedial Action of Soil

LIST OF ACRONYMS

ARAR Applicable or Relevant and Appropriate Requirements

CERCLA Comprehensive Environmental Response, Compensation, and Liability Act

ECMWF Eau Claire Municipal Well Field

EDS East Disposal Site

ES Enforcement Standard (State Groundwater Standard)

IRM Initial Remedial Measure

MRDS Melby Road Disposal Site

NDC National Defense Corporation

NPI National Presto Industries, Inc.

O&M Operation and Maintenance

OSWER Office of Solid Waste and Emergency Response

QA/QC Quality Assurance/Quality Control

PAL Preventive Action Limit (State Groundwater Action Trigger)

RAO Remedial Action Objectives

RI Remedial Investigation

ROD Record of Decision

SVE Soil Vapor Extraction

U. S. EPA United States Environmental Protection Agency

VOC Volatile Organic Compound

WDNR Wisconsin Department of Natural Resources

EXECUTIVE SUMMARY

This Five-Year review is a consolidated review for two National Priorities List (NPL) sites: the National Presto Industries (NPI) Site and the Eau Claire Municipal Well Field (ECMWF) Site. The two sites were listed on the NPL in the normal course of business. It was later determined that the groundwater contamination found at the ECMWF was caused by the source areas of contamination at the NPI Site. The ECMWF was listed in 1984. Information from the Remedial Investigation (RI) at the ECMWF Site in 1994-5, did not identify NPI as the source of contamination at the NPI site. The NPI Site was listed in 1986. It was not until the Remedial Investigation (R.I.) was completed at the NPI Site that the source of contamination initially identified at the ECMWF Site was determined to be from the NPI Site. The first five-year review for the ECMWF was issued on September 29, 1997, and the first five-year review for the NPI Site was issued on September 25, 1998.

The primary goal of the remedies is to provide a permanent safe water supply to the affected area and to remove, treat and/or contain the sources of contamination. The selected remedies for the Eau Claire Municipal Well Field (ECMWF) and the National Presto Industries (NPI) sites included the following components: installation of an air stripper at the city's municipal well field to remove volatile organic compounds (VOCs) prior to distribution to the city customers; extending municipal water service from the City of Eau Claire to businesses and residences in the affected area that have annexed to Eau Claire; closing and abandoning affected private wells within the affected area; monitoring of other private wells; establishment of the Town of Hallie Water Utility and provision of municipal water to the residents of the town; creation of ordinances by the City and the Town of Hallie prohibiting the installation of any private wells within their jurisdiction; development by the town of a permit for any well owner; installation of groundwater recovery wells and cascade aerators to remove and treat contaminated groundwater and provide gradient control of groundwater in the two major NPI source areas; excavation and disposal of forge compound and contaminated soil in the NPI source areas; and the design and construction of a soil vapor extraction system (SVE) and engineered cap to control contaminants at the Melby Road Disposal Site (MRDS) area of the NPI site. All of these remedies have been implemented, although one area at the NPI site requires further investigation.

This five-year review found that the remedies were implemented in accordance with the requirements of the Records of Decision (RODs). All remedies are functioning as designed. Immediate threats to human health and the environment have been addressed. The remedies implemented at these sites are expected to continue to be protective in the short term. Long term protectiveness will be achieved when groundwater quality goals are met.

**National Presto Industries and the ECMWF Sites
Eau Claire, Wisconsin
Consolidated Second Five-Year Review Report**

I. INTRODUCTION

The purpose of the Five-Year Review is to determine whether the remedy at a site is protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in Five-Year Review reports. In addition, Five-Year Review reports identify issues found during the review, if any, and provide recommendations to address them.

The United States Environmental Protection Agency (U.S. EPA) Region 5 has prepared this Five-Year Review for the National Presto Industries (NPI) site Interim Action Record of Decision (ROD), and the Eau Claire Municipal Well Field (ECMWF) site in Eau Claire, Wisconsin, a downgradient receptor of the contamination that originates at the NPI site, pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. Section 9601 *et seq.* (1980), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), Pub. Law No. 99-499, 100 Stat. 1613 (1986) (CERCLA, as amended), section 121 (c), the National Contingency Plan (NCP) section 300.400(f)(4)(ii), and OSWER directives 9355.7-02 (May 23, 1991), 9355.7-02A (July 26, 1994) and 9355.7-03A (December 21, 1995). CERCLA section 121 states:

If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than each five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented. In addition, if upon such review it is the judgment of the President that action is appropriate at such site in accordance with section [104] or [106]. The President shall take or require such action. The President shall report to the Congress a list of facilities for which such review is required, the results of all such reviews, and any actions taken as a result of such reviews.

The Agency interpreted this requirement further in the NCP; 40 CFR Section 300.430(f)(4)(ii) states:

If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and

unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action.

The U.S. EPA, Region 5, conducted this consolidated five-year review of the remedies implemented at the NPI and ECMWF sites in Eau Claire, Wisconsin. This is the second Five-Year Review for both the ECMWF and NPI sites. The triggering action of this consolidated five-year review is the date of the earlier of the five-year reviews which was the five-year review performed on the ECMWF Site in 1997, as shown in EPA's WasteLAN database as of September 2002.

This report documents the results of the five-year review. This document will become a part of the NPI site and ECMWF site Superfund files. In January 2001, Sheri Bianchin, the U.S. EPA Remedial Project Manager (RPM) notified the PRPs and the WDNR Site coordinator that the two Sites would be subject to a coordinated 5-year review during 2002 where the review was conceptually discussed. These 5-year reviews were conducted between March 2002 and September 2002. An on-site inspection occurred at the NPI site on July 1, 2002, and at the ECMWF Site on July 2, 2002. (Site Inspection forms and Photographs documenting the site inspections are included as Appendix A and B, respectively). The U.S. EPA RPM led the review with support from Eileen Kramer, WDNR site coordinator. The Community Involvement Coordinator, Susan Pastor placed an ad in the local papers on August 2, 2002 to solicit public input in this review-copy attached. No comments were received. The public repositories are located at both the Eau Claire Library and the Town of Hallie Library. Although the Sites have generated much interest in the past, there have been no contacts by the public for the last couple of years. Hence, no interviews were conducted with the local residents during this 5-year review. The WDNR has provided valuable input to the process and concurrence with the findings and recommendations of these five-year reviews. The completed five year review will be placed in the public repositories and an ad will notify the communities of the completion of these 5-year reviews. Interested persons can follow the Site progress by looking at the updated fact sheets found at www.epa.gov/R5Superfund/npi or www.epa.gov/superfund/sites/rod_sites. Also, updated site information can be obtained through the CERCLIS database found at EPA's website.

These five-year review are required by statute due to the fact that hazardous substances, pollutants, or contaminants remain at the site above levels that allow for unlimited use and unrestricted exposure. Future five-year reviews will be necessary since hazardous substances, pollutants, or contaminants remain at the site above levels that allow for unrestricted use and unrestricted exposure.

II. BACKGROUND

Physical Characteristics

ECMWF Site

The ECMWF is located in the Chippewa River Valley, east of the river and approximately 2.5 miles west of the NPI site. Figure 1 shows both sites and their locations relative to one another. The ECMWF consists of 15 municipal groundwater wells in two adjoining well fields (five in the north well field and ten in the south) which provide drinking water to approximately 60,000 residents and commercial users. All municipal wells are completed in the glacial outwash sand and gravel aquifer. In addition to these municipal wells, a number of private wells previously drew drinking water from this sand and gravel aquifer. This sand and gravel aquifer is hydraulically connected to the underlying sandstone aquifer, which is not used extensively in the area due to its low hydraulic conductivity and the water's poor aesthetic qualities. In the past, water was also used for private wells in the area. The well field is about a mile long and trends generally in a north-south direction. Land use in the area around the well field is primarily residential. The Chippewa Valley Regional Airport is located approximately one-quarter mile east of the north well field.

NPI Site

The NPI site is located at 3925 North Hastings Way in Eau Claire, Wisconsin. The site of approximately 320 acres lies within the City of Eau Claire, with the exception of approximately 9 acres in the extreme eastern part of the property that are located in the Town of Hallie and approximately 4 acres in the extreme southern part of the property that are located in the Town of Seymour. Most of the NPI site, comprising approximately 320 acres, is situated in Chippewa County; a portion is located along the northern border of Eau Claire County. Figure 2 is a site plan for the NPI site. Prior to its purchase by the U.S. Government (War Department) in 1942, the site was owned by nine individuals and was predominantly farmland with isolated areas of woodlands. The current land use in the immediate vicinity of the site is characterized by light residential and commercial development, and light manufacturing, warehousing and transportation such as railway, highway and an airport. The unincorporated Town of Hallie is located north and east of the site, while the City of Eau Claire is located south and west of the site.

The site is relatively flat and abuts a sandstone ridge at the south of the site. The areas to the east, north, and west are also relatively level, generally sloping gradually toward the Chippewa River, which is located approximately 2 miles north and west of the site. Lake Hallie, an impounded remnant of a former channel of the Chippewa River, lies approximately 1 mile north of the site.

Extending northward from the northwestern portion of the site to Lake Hallie and westerly from the site to the Chippewa River are buried pre-glacial valleys whose sand and gravel deposits serve as a primary drinking water aquifer in the Eau Claire area. Many private wells immediately north of the site were finished in the sand and gravel deposits within one of these buried valleys. Approximately 2 miles west of the site, the ECMWF draws groundwater from more of these buried deposits. The direction of groundwater flow is controlled by the bedrock valleys beneath the sand and gravel, which carry groundwater to the northwest towards Lake Hallie and to the west towards the Chippewa River and the ECMWF. There is a local groundwater flow divide just northwest of NPI's property. From the divide, groundwater either flows north to Lake Hallie

(e.g., the ground water below the MRDS area). Or west-southwest to the Eau Claire municipal well field (e.g., the groundwater below Lagoon #1). The contaminants from the NPI site appear to have migrated vertically through the unconsolidated soils to the groundwater and have then traveled within the aquifer following the buried valleys. There is a direct relationship between the contaminants at the NPI site and those found at the ECMWF.

Land and Resource Use

ECMWF Site

Historic land use at this site has been restricted to its use as a well field for the city for the past 60+ years. According to city personnel, prior to that time it was forested land.

Current land use in the surrounding area is primarily residential, with a small park to the south and the Eau Claire airport about one-quarter mile east of the northern portion of the city well field. It is anticipated that these land uses will continue into the foreseeable future.

NPI Site

The NPI property was originally used for farming. In the early 1940s, the United States government acquired the property. From 1942 to 1945, the site was a government-owned, contractor-operated producer of ordnance chemicals and radar tubes. NPI purchased the property from the federal government in 1947. At the outset, the company manufactured household appliances and outboard motors at the facility. Wastes generated consisted of metals, oils, grease, and spent solvents. However, beginning in 1951, artillery shell fuses and aircraft parts were produced by NPI under military contracts. By 1954, NPI had dedicated the site entirely to defense-related manufacturing, primarily the production of metal parts for 105-MM and 8-inch artillery shells, under contract with the Department of the Army ("DOA"). Early waste-handling practices included the use of dry wells and seepage lagoons. Wastes were also discharged to a former sand and gravel pit. The most environmentally significant waste stream on site was the spent forge compound, which was composed of mineral oil, graphite, asphalt and solvents. The VOC of primary concern is 1,1,1-trichloroethane (TCA) a solvent which was used to remove the forge compound from the projectile manufacturing equipment.

Between 1959 and 1965, NPI engaged in little to no active production at the site. The site was again activated in 1966; multi-shift production continued until the mid-1970s. Except for a six-month research and development contract in late 1983 and early 1984, production of the 8-inch shells ceased in 1971. Production of the 105-MM projectiles ceased in 1980. From 1966 to 1969, spent forge compound was also land filled on site. Between 1981 and 1992, National Defense Corporation (NDC), a wholly owned subsidiary of NPI, entered into annual standby contracts with the DOA to maintain the site in a high state of readiness. After the contracts ended in 1992, much of the equipment was disassembled and sold to other companies.

Notable current surface features at the NPI site include the main building, a capped landfill at the Melby Road Disposal Site (MRDS) and a number of smaller outbuildings. Several buildings are used for warehousing.

Current land use for the surrounding area is primarily residential, with some commercial enterprises to the north and west. It is anticipated that these uses will continue into the foreseeable future.

History of Contamination and Initial Response

ECMWF Site

In March 1981, routine groundwater sampling by the Wisconsin Department of Natural Resources (WDNR) detected the presence of volatile organic compounds (VOCs) in the City of Eau Claire municipal water supply. Contaminants included trichloroethylene (TCE), 1,1-dichloroethylene (DCE), 1,1-dichloroethane (DCA) and tetrachloroethylene (PCE). The City immediately began testing its municipal wells and private residential wells north of the municipal well field. VOCs were also detected in some of the residential wells at concentrations above groundwater standards. The ECMWF was proposed for the National Priorities List (NPL) on September 8, 1983 and placed on the NPL on September 21, 1984. Information from U.S. EPA's remedial investigation (RI) did not identify NPI as the source of the contamination at that time.

Following issuance of a ROD in 1985, as an interim remedial measure, an air stripper was installed in 1987 by the U.S. Army Corps of Engineers under contract to the U.S. EPA. The air stripper was designed to remove the VOCs from the municipal water supply before it was discharged to the distribution system. This action was performed by the Corps of Engineers under contract with the EPA. In response to a subsequent ROD in 1988, private well owners in the area were connected to the municipal water supply system.

NPI Site

This site was proposed for the NPL on October 15, 1984 and listed on the NPL on June 10, 1986. It wasn't until the remedial investigation was completed at this site that the source of the contamination initially identified at the ECMWF was determined to be from the NPI site. A total of five plumes of groundwater contamination were initially identified at the NPI site. Figure 1 shows the historic locations of the plumes and both sites. Descriptions of the plumes are as follows:

- Plumes 1 / 2, (originally identified as two separate plumes, but now considered one) is approximately 2.8 miles in length which originates in the "Southwest Corner" and flows westerly toward the Chippewa River.
- Plumes 3 and 4, which originated at the MRDS and flowed north toward Lake Hallie. These plumes are also now referred to as a single plume (3 / 4).
- Plume 5, which originated at the East Disposal Site (EDS) and flows northwesterly toward Lake Hallie.

At one time, contaminants from all the plumes had migrated off site. Currently, the only true and continuing plume is Plumes 1 / 2 which reached the ECMWF adjacent to the Chippewa River, approximately 2.5 miles west of the site. Off-site contaminants from the others are generally no longer evident or, if so, are present only intermittently and at concentrations below the NR 140 PALs.

The response to the NPI groundwater contamination consisted of installing two on-site groundwater pump-and-treat systems (extraction wells EW-1R and EW-2 at the MRDS and EW-3 and EW-4 in the Southwest Corner west of Lagoon #1) and one cascade aerator for each system. These systems discharge their treated groundwater to the Chippewa River via the city storm sewer system. It was determined that wastewater discharged into Lagoon 1 contained significant amounts of waste forge compound resulting in the groundwater contamination. Waste forge compound was also landfilled at the MRDS and the East Disposal Site. During the remedial action, the contaminants in the source areas were removed and either shipped off site and destroyed in CERCLA-approved cement kilns, disposed of at a licensed landfill, or placed under the cap at the MRDS.

Basis for Taking Action and Contaminants of Concern:

Although a number of chemical compounds-consisting of organic and inorganic constituents- have been detected in soil and groundwater at the NPI site, the main contaminants of concern were DCA, DCE, PCE, 1,1,1-trichloroethane (TCA) TCE, and cadmium (to a lesser extent). Of these, TCE is currently the primary contaminant of concern. During the investigation of the sites, levels of VOCs were found to exceed the drinking water standards set by U.S. EPA under the authority of the Federal Safe Drinking Water Act; these standards are called the Maximum Contaminant Levels (MCLs). Contamination levels were also higher than the state numerical equivalent to MCLs called the Wisconsin Enforcement Standards and the Wisconsin Preventive Action Limits (PALs) for ground water. PALs are 5 to 10 times lower than the federal MCLs. The PALs are the cleanup criteria for the groundwater.¹

¹As a basis for action, the Eau Claire Record of Decision (ROD) dated March 1988 states that "EPA will cleanup the groundwater to non-detect for these compounds and continue to pump and treat for a period of time beyond the non-detect to assure that the target compound limits (TCLs) have been reached." (emphasis added). The ROD explains that the target clean-up levels or TCLs were intentionally set low to protect against cumulative carcinogenic effects. The decision-maker set a 1E -06 cumulative carcinogenic risk for the site and apportioned the risk across several of the site's volatile organic compounds. In order to provide the desired protectiveness, the TCLs needed to be lower than the MCLs. The NPI ROD dated May 1996 states the selected remedy (page 42) for addressing Plumes 1/2 is GW-1A. This alternative includes continued operation of the ECMWF air stripper (p.23 of ROD). The ROD further states that the ground-water cleanup goals (that must be achieved within a reasonable period of time) for the contaminants of concern are the PALs. A reasonable period of time was defined in the ROD as 30 years. However, the determination whether additional measures will be required for Plumes 1 / 2 will be based upon compliance/or projected compliance within a reasonable period of time. (p.24). Referring again

VOCs and inorganic compounds were detected in samples of soil and waste materials collected from the site, in amounts that could cause potential health risks. Because of the presence of the contamination, the baseline risk assessment was performed to assess then current and future environmental risks associated with the NPI site which indicated that remediation was necessary to abate the unacceptable risks.

The risk assessment identified the following exposure pathways at the Site: direct contact with the groundwater or soil; inhalation of vapors from the groundwater or dust at the site; and/or ingestion of the ground water or soil.

The operation of the air stripper at the city well field (ECMWF) air stripper eliminate the ground water exposure pathway for Plumes 1 / 2; the creation of the Hallie Sanitary District eliminated the ground water exposure pathway for Plumes 3, 4, and 5; and local ordinances are in effect to prevent area residences and businesses from using wells in the area for drinking water. The capping addresses the direct contact and inhalation threat. At the NPI site, direct-contact exposure to waste materials is no longer a significant concern, since virtually all of the waste forge compound has been removed from the NPI site or placed under the cap at the MRDS. Risk of exposure via direct contact is now extremely low. These removal activities have also virtually eliminated the source areas at Lagoon #1, the EDS, the Southwest Corner, Drainage Ditch #3, and Dry wells #2 and #5, which could affect groundwater quality beneath these areas of the site. The cap at the MRDS has eliminated the direct-contact risk at that portion of the site and, in conjunction with the SVE system, is protective of groundwater quality. As documented below, long-term monitoring program continues to documented that the implemented remedy is functioning and meeting all Applicable or Relevant and Appropriate Standards (ARARs).

A list of ARARs that continues to be met is contained in the RODs. There have been no additional ARARs identified at this Site that impact the ability of the remedy to meet the ROD objectives.

III. SITE CHRONOLOGY

In March 1981, routine groundwater sampling by the State of Wisconsin detected VOCs in the City of Eau Claire's municipal water supply. Figure 1 is a site plan showing the ECMWF and NPI sites and the various individual source areas of the latter. Contaminants of concern included VOCs such as TCA, TCE, DCE, DCA, and PCE. In addition, to monitoring the municipal production wells, the City began testing private residential wells located immediately northeast of

to the 1996 ROD for the NPI Site, third Operable Unit, it states that U.S. EPA will evaluate the effectiveness of the selected remedy as part of the 5-year review process. "If the data available at the first such review is insufficient for a reliable trend analysis, evaluation of remedy performance will be completed in subsequent review The 5-year review would also evaluate the technical impracticability of attaining PALs in the ground water. Hence, the ground water clean up goals for the contaminants of concern are the PALs (which must be achieved within a reasonable period of time).

the well field. VOCs were detected in several of the residential wells at concentrations above federal drinking water standards.

Pursuant to CERCLA, on September 8, 1983, the U.S. EPA proposed the ECMWF site on the National Priorities List and it was formally placed on the NPL in September 1984. Also in 1984, the U.S. EPA conducted a focused Remedial Investigation (RI) to determine the extent and source of the groundwater contamination. Based on groundwater monitoring data from private wells and from monitoring wells installed as part of the ECMWF RI, two distinct plumes, separated by 1,700 feet, were detected. Although the U.S. EPA investigated several potential sources during the RI, the Agency was unable to confirm the source of the plumes. The NPI site was not initially investigated as a potential source for the groundwater contamination in the RI conducted for the ECMWF, but was identified in the RI as a site requiring additional study. On June 10, 1985, the U.S. EPA issued a ROD, which selected a packed column air stripper as an Initial Remedial Measure (IRM) to address the groundwater contamination at the ECMWF. The Corps of Engineers began construction of the air stripper in 1986 and completed construction in June 1987. The system became operational in August 1987. Treated groundwater from the air stripper is discharged into the municipal water treatment plant where it is combined with water from uncontaminated wells. This combined stream is then chlorinated and fluoridated and passed on to municipal users.

The NPI site was proposed as an NPL site on October 15, 1984, and formally listed on June 10, 1986. Also in 1986, NPI entered into an agreement with the U.S. EPA and the WDNR to conduct the Remedial Investigation/Feasibility Study (RI/FS) at the NPI site. An Administrative Order by Consent became effective on July 8, 1986. The purpose of the RI was to identify sources of contamination and to characterize the contamination at the site. The RI began in 1987 and was finalized on September 12, 1991. The Final RI includes a Baseline Risk Assessment, which was conducted to characterize the current and potential threat to public health and the environment at the site. A total of five individual plumes of groundwater contamination were identified. Figure 1 shows the locations of the plumes and their approximate maximum sizes.

On March 31, 1988, the U.S. EPA issued a ROD for the ECMWF that provided for continued operation of the two-column air stripper, installation of additional extraction wells in the north well field and in Plume 2 with direct discharges from them into the Chippewa River, and the connection of private groundwater users with wells contaminated or threatened by the contamination to a municipal drinking water system.

After the March 1988 ECMWF ROD was completed and during the remedial investigation of the NPI site, the U.S. EPA conclusively determined that wastes located at the NPI site were the source of the groundwater contamination at the ECMWF.

The final ROD for the ECMWF site further provided for the extension of municipal water service from the City of Eau Claire to private well users in the area affected by Plumes 1 and 2 (identified in later documents as Plumes 1 / 2 ²). During the implementation of this component of the

² The final boundaries of the affected area were determined according to the results of extensive private well and monitoring well sampling conducted between 1985 and 1989. NPI conducted

ECMWF ROD, it became apparent to the U.S. EPA and WDNR that, because of the sensitive nature of providing municipal services to unincorporated areas, it was unlikely that this component of the selected remedy could be implemented for the buffer zone adjacent to what was then designated as Plume 2. The U.S. EPA decided accordingly to delay implementation of this aspect of the ECMWF ROD until a more thorough study of the problem could be completed.

In the interim, on April 25, 1989, U.S. EPA issued an Unilateral Administrative Order to NPI pursuant to Section 106 of CERCLA. In accordance with that Order, NPI implemented a temporary bottled water distribution program for all private well users in the unincorporated area (Town of Hallie) affected by Plumes 3, 4, and 5.

On August 1, 1990, U.S. EPA issued a ROD for the NPI site that selected a permanent alternative drinking water supply for the area affected by groundwater plumes 3, 4, and 5. U.S. EPA issued a Section 106 Unilateral Administrative Order in March 1991 to NPI and its wholly owned subsidiary, the National Defense Corporation (NDC), requiring implementation of the activities identified in the 1990 NPI ROD. This work included construction of a water supply system and an extension of the municipal water service to areas annexed by the City of Eau Claire. A permanent alternate drinking water supply was installed by NPI in the fall of 1991 to approximately 174 residences in the Town of Hallie, serving a population of about 425.

Approximately one year later (September 1991), U.S. EPA issued a ROD for the selected interim action for on-site contaminated groundwater at the NPI site, subject to the Five-Year Review process. The response objective of this interim action was to prevent the further off-site movement of contaminant Plumes 1/2 and 3 and to prevent further environmental degradation of the groundwater. The selected remedy included installation of groundwater extraction wells (two each in the Southwest Corner and the MRDS) and treatment of the extracted water by two independent cascade aeration units, with discharge of the treated groundwater via the City of Eau Claire storm sewer system to the Chippewa River. The WDNR concurred with this selected remedy.

In 1992, the Hallie Sanitary District was formed to operate the new water supply system paid for by NPI. On July 2, 1992, the U.S. EPA issued NPI and NDC another Section 106 Unilateral Administrative Order, which required these companies to construct or fund the construction of the on-site groundwater treatment cascade system selected in the September 1991 interim action ROD. The wells were installed, and construction activities for the treatment system were completed in February 1994. The groundwater treatment system began operation in March 1994 and continues to operate effectively today.

additional sampling in the same area during the NPI RI under the direction of U.S. EPA and WDNR to fully define the nature and extent of private well contamination. The U.S. EPA worked closely with WDNR's District Office in Eau Claire to integrate data generated during the NPI RI with the historical database to ensure that the affected area encompassed private wells contaminated or threatened by contamination from the NPI site.

In addition to the creation of the Hallie Sanitary District, local regulation and ordinances now restrict the use of private wells in both the City and the Town of Hallie. The Town of Hallie prohibits the potable use of private water in areas connected to the municipal supplies, and private wells must be disconnected from indoor plumbing. The City, while not prohibiting private wells, does require that there be no cross connections between private wells and the municipal water supply. Generally speaking, the depth to groundwater in the area of the plumes (60 to 70 feet) and the presence of municipal water make it unlikely that private wells will be drilled.

In 1993, NPI and the U.S. EPA reached a settlement in the form of a Consent Decree for the operation and maintenance of the ECMWF groundwater treatment system. The air stripper continues to operate effectively and currently treats approximately 5 million gallons of water daily.

On October 14, 1993, U.S. EPA, NPI, and NDC entered into an Administrative Order by Consent for the performance of time-critical, on-site removal activities. This Order, subsequently modified on November 4, 1994, provides for (1) time-critical excavation of the waste forge compound from Lagoon No. 1 and the EDS, and (2) use of wastes such as a supplemental fuel at a cement kiln approved under the CERCLA, as amended. Non-time-critical components of the removal action included characterization, evaluation, design, and remediation of soils and soil gas, if any, remaining in Lagoon No. 1 after the excavation is complete. The estimated cost of the work to be completed pursuant to the removal action was \$4.4 million. Removal of the wastes began in 1993, and almost all of the waste forge compound materials had been excavated from Lagoon No. 1 and the EDS by the end of 1995.

The final site-wide remedy was identified in the May 15, 1996 ROD. In addition to those response actions previously completed and currently underway at the NPI site, the U.S. EPA determined that the following additional measures should be implemented in order to fully address all threats to human health and the environment posed by contamination at the site:

- Melby Road Disposal Site (MRDS) and Eastern Disposal Site (EDS): Installation of an SVE system at the MRDS. Removal of concentrated wastes, if any, identified by the SVE at the MRDS. Exhaust gas from the SVE system is discharged into the atmosphere through a stack less than 25 feet high. Air emissions of concern from the System included TCL VOCs. Samples are collected routinely. Excavation and consolidation of EDS wastes with MRDS wastes and installation of a multi-layer cap compliant with Wisconsin Administrative Code Chapter NR 660 over the combined wastes at the MRDS.
- Drainage Ditch #3: Removal of soils contaminated with waste forge compound and their consolidation with wastes at the MRDS.
- Dry Wells #2 and #5: Removal of contaminated soils and disposal of them in an off-site landfill.

- Plumes 1 / 2: Continued operation of the two-column air stripper at the leading edge of the groundwater contaminant plume, continued operation of the on-site pump-and-treat system to prevent the off-site migration of contaminated groundwater, and long-term groundwater monitoring of Plume 1 / 2.
- Plumes 3 / 4: Continued operation of the on-site pump-and-treat system to prevent the off-site migration of contaminated groundwater, long-term groundwater monitoring of Plumes 3 / 4, and surface water sampling in Lake Hallie.
- Plume 5: Long-term groundwater monitoring of Plume 5 and surface water sampling in Lake Hallie.

The remedies have been fully implemented. All remedial activities are either ongoing or completed. Long-term treatment of groundwater and periodic monitoring continue both on site and off site.

A Five-Year Review was completed on the ECMWF air stripper and drinking water annex in 1997. Although there had been significant improvements in groundwater quality at the city well field, the recommendation of that review was for the continued operation of the air stripper. A separate Five-Year Review was completed for the NPI site in 1998. With the exception of three monitoring wells in the Southwest Corner, VOC concentrations were stable or decreasing at the NPI site. The recommendation for the NPI site was for continued operation of the extraction wells and cascade aerators until the cleanup levels identified in the ROD (NR 140 PALs) are reached.

IV. REMEDIAL ACTIONS

ECMWF Site

The final remedy for the ECMWF site was developed to protect public health and the environment by preventing ingestion and inhalation of contaminants found in groundwater and by restoring the contaminated aquifer. The remedy as documented in the 1988 ROD was selected to meet these objectives. The major components of the selected remedy were:

- Construction and operation of an air stripper to treat contaminated municipal water.
- Provision of municipal water to private well users within or near the area of groundwater contamination.
- Installation of groundwater extraction wells in the contaminant plumes.
- Discharge of untreated groundwater pumped from the extraction wells into the Chippewa River.

After the ECMWF ROD was issued, the WDNR determined that the discharge of untreated groundwater from the proposed extraction wells into the Chippewa River was not allowed under Wisconsin law. As a result, that component of the ECMWF remedy was never implemented. Monitoring of the influent and effluent at the air stripper continues to document that the implemented remedy is functioning properly and is protective of both human health and the environment.

NPI Site

The interim action for the site was completed in 1991. The interim action was limited to an operable unit that addresses contaminated groundwater through plume containment by means of groundwater extraction from the Southwest Corner and MRDS and treatment. The specific components of the remedial action included:

- Treatment of extracted groundwater from the above locations by cascade aeration using two 9-foot concrete step structures. One structure will be used for the Southwest Corner; the other will be used for the MRDS.
- Discharge of treated groundwater from the cascade aerators to the City of Eau Claire storm sewer system for transport to the Chippewa River.
- Long-term groundwater monitoring to measure progress and performance of the groundwater extraction system; to verify completeness of contaminant plume capture; to determine the need, if any, for additional treatment of extracted groundwater; and to monitor compliance with the WPDES permit requirements.
- Provisions for the installation of a dedicated pipeline from the NPI site to Lake Hallie or the Chippewa River should future use of the Eau Claire storm sewer be precluded or sufficiently restrictive, thus jeopardizing the ability of this interim action to prevent off-site movement of contaminated groundwater.

The final ROD for the NPI site (May 15, 1996, OU3) further addressed contamination in the groundwater plumes (1 / 2) traveling from the NPI site to the ECMWF and serves as the U.S. EPA's final remedy with regard to the plumes. It also provided for long-term operation, maintenance, and repair of the ECMWF air stripper and the installation and operation of on-site groundwater extraction wells at the MRDS and Southwest Corner downgradient of Lagoon #1 and Drainage Ditch #3.

As discussed below, long-term monitoring continues to document that the implemented remedy is functioning properly and meeting all federal and state Applicable or Relevant and Appropriate Requirements (ARARs). A list of the ARARs that continue to be met is contained in the ROD. There have been no additional ARARs identified at this site that impact the ability of the remedy to meet the ROD objectives.

V. REMEDY IMPLEMENTATION

ECMWF

Construction completion for the Site was documented in a close-out report dated September 21, 1999. The 1985 ROD required the installation of an air stripper to treat contaminated groundwater extracted by the municipal well system. The 1988 ROD provided for the continued operation of the air stripper to treat contaminated water, continued provision of municipal water to private well owners within and near the area of groundwater contamination, installation of groundwater extraction wells in the contaminant plume, and the discharge of untreated contaminated groundwater into the Chippewa River. The air stripper has been in constant operation since the last Five-Year Review in 1997. A permanent municipal water supply has been provided to affected private well owners in the Town of Hallie. The groundwater extraction wells at/near the city well field, with a discharge of untreated contaminated water to the river, were never installed because Wisconsin law prohibits the discharge of untreated contaminated water. Both the City of Eau Claire and the Town of Hallie continue to have ordinances in place that prohibit the installation of private wells or cross connections with the municipal water supply. The town also has an annual permit requirement for those that have retained their private wells for non-potable uses such as watering lawns and washing cars. According to Jim Nyre, manager of the Town's water utility, there are 13 remaining private wells. All have use permits.

NPI Site

Construction completion for the Site was documented in a close-out report dated September 21, 1999. The 1990 ROD (OU2) required the installation of a permanent alternative drinking water supply for the private well owners affected by Plumes 3, 4, and 5. The 1991 ROD (OU1) identified an interim action (pump-and-treat) to prevent off-site migration of on-site contaminated groundwater in Plumes 1 / 2 and 3. A 1993 Consent Decree required NPI to pay for the groundwater treatment system (air stripper) installed by the City. A 1993 Administrative Consent Order, modified in 1994, required the excavation of waste forge compound from Lagoon #1 and the EDS and the characterization, evaluation, design, and remediation of any soils and soil gas that may remain in Lagoon #1 after the excavation activities had been completed. In accordance with 1996 ROD, an SVE system was installed at the MRDS to prevent future releases of VOCs into the groundwater. The capped area is approximately 10 acres. The average depth to the water table is 70 feet below the bottom of the multi-layer cap. Since October of 1999, the SVE has been operating at a low-flow scenario. The 1996 ROD also required excavation and consolidation of EDS wastes with those at the MRDS, and installation of a multi-layer cap at the MRDS. It also required the following:

- Removal and off-site disposal of contaminated soils from Dry Wells #2 and #5.
- Removal and disposal at the MRDS of contaminated soils from Drainage Ditch #3.
- Continued operation of the ECMWF air stripper and the on-site pump-and-treat systems for Plumes 1 / 2 and 3 / 4.

- Long-term monitoring of groundwater Plumes 1 / 2, 3 / 4, and 5 and surface water monitoring of Lake Hallie.

Both pumpable (about 1.1 million gallons) and non-pumpable (about 5,000 cubic yards) waste forge compounds from Lagoon #1 were removed between late 1993 and late 1995 and sent to a CERCLA-approved cement kiln for use as secondary fuel. Approximately 9,800 cubic yards of soil and forge compound were incorporated under the cap at the MRDS. An SVE system was subsequently installed in Lagoon #1 and operated from September 1997 to August 1998. In September 1998, the U.S. EPA approved the abandonment of the SVE wells and the backfilling of Lagoon #1. Waste forge compound and contaminated soils at the EDS and in Drainage Ditch #3 have been excavated and incorporated, along with the Lagoon #1 waste described above, under the cap at the MRDS. Contaminated soils from Dry Wells #2 and #5 have been excavated and disposed of at a licensed sanitary landfill. The Lagoon #1 activities were completed by June 1998. All these activities, with the exception of the Lagoon #1 excavation and SVE activities, occurred during the summer of 1998. In addition, an SVE system was installed beneath the cap at the MRDS to remove contaminated soil gas. Routine sampling of the SVE exhaust gas is done to monitor the performance of the system.

Several removal actions of material contaminated with waste forge compound were conducted that were not specifically required by the 1996 ROD. Excavated areas include the east extension of former Lagoon #1; about 7,000 square feet from an area west of former Lagoon #1 in the southwest property corner; a swale between former Lagoon #3 and #4 in 1998; the southwest corner of former Lagoon #2 in 2000, and the loading dock area at the south end of NPI's main building in 2001.

All the material from the southwest property corner and most of the material from the east extension of former Lagoon #1 were consolidated under the cap at the MRDS in 1998. Approximately 350 cubic yards (yd³) of material from the east extension of Lagoon #1, 60 yd³ of stockpiled material from the MRDS; 60 yd³ from the former Lagoon #3/#4 swale area; 3,000 yd³ from the southwest corner of former Lagoon #2; and 1,900 yd³ from the loading dock area were disposed of off site at licensed sanitary landfills. "No Further Remedial Action" submittals to the WDNR for the southwest corner of former Lagoon #2 and the loading dock area will be submitted by NPI shortly.

The WDNR has concurred with No Further Remedial Action requests submitted by NPI for soil at the Drainage Ditch #3; Dry Wells #2 and #5; the southwest property corner and the EDS. For the latter, the WDNR recommended that a deed restriction be placed in this area to address residual contamination. Copies of these requests and the WDNR responses are provided in Appendix D.

The groundwater extraction wells at the Southwest Corner and the MRDS and the two corresponding cascade aerators have run continuously, except for a short period of down time during the above 1998 remedial activities.

Monitoring of specific groundwater monitoring wells and private wells has continued at regularly scheduled intervals. Annual reports are prepared and submitted to the U.S. EPA and WDNR documenting this activity, summarizing the results, and providing recommendations, as appropriate, for modifications to the groundwater monitoring program. In March 2002, EPA approved a new ground water collection procedure to allow for a state-of-the-art low flow sampling procedure. Discussions are underway between NPI and the agencies to look at modifying the groundwater monitoring program.

Numerous rounds of surface water samples have been collected from Lake Hallie and analyzed for VOCs since 1996. The most recent rounds of samples were two that were collected in 1999. The only compounds detected at concentrations above the limit of quantitation in these samples were toluene and xylenes. Both were present at very low concentrations in only a few samples. The intermittent presence of these compounds at low concentrations may be due to storm water discharges into and/or motorboat activity on the lake.

VI. SYSTEM OPERATION/OPERATION AND MAINTENANCE

ECMWF Site

An operation and maintenance (O&M) plan was prepared for the air stripper at the ECMWF. The plan discusses the operation and monitoring requirements for the air stripper and the quality assurance/quality control (QA/QC) procedures. Monitoring requirements were established for both in fluent into and effluent from, the packed column air stripper. These monitoring requirements include specific sample frequencies, analytical methods/parameters and Quality Assurance/Quality Control (QA/QC) Procedures. The plan also describes how routine maintenance is to be conducted following manufacturers' recommended schedules and the sampling and analytical requirements for both the influent and effluent. The plan was designed to be consistent with applicable state regulations and the Safe Drinking Water Act. The City of Eau Claire also conducts monthly VOC analysis in its own laboratory of both the influent to and effluent from the air stripper. Samples are also sent to a laboratory certified by the State of Wisconsin for analyses in accordance with the Safe Drinking Water Act requirements. Actual monitoring data collected by the City of Eau Claire documents significant improvement in ground water quality as a result of the pump and treat system. Table 17 provides information which depicts the decreasing concentrations of contamination in the treatment system influent.

NPI Site

Groundwater

A groundwater sampling program and QA/QC Plan were also developed for this site and have evolved over time as contaminant concentrations declined and new sampling equipment and techniques became available. The current monitoring program consists of quarterly sampling and analysis of extraction wells EW-1R, EW-2, EW-3, and EW-4; the effluent from cascade aerators CAS-1 and CAS-2; manhole MH-18; 70 monitoring wells; and 3 private wells. See Figure 1 for the well locations. These wells include eight monitoring wells (EC-1 to EC-8) in the immediate

vicinity of the city well field. Sampling from these 73 wells ranges from quarterly to annual, depending on the historic concentrations of contaminants in a given well. The analytes for all of the wells, CAS-1, and CAS-2 are either a select list of five VOCs (DCA, DCE, PCE, TCA and TCE) and/or cadmium. The quarterly analytes for MH-18 include the five select VOCs, cadmium, pH, temperature, and hardness as calcium carbonate. The annual analytes for MH-18 include arsenic, aluminum, trivalent and hexavalent chromium, copper, lead, nickel, selenium, silver, zinc, pentachlorophenol, di-n-butyl phthalate, bis (2-ethylhexyl) phthalate, and the PAHs.

Groundwater elevations are measured in a more extensive list of monitoring wells during each sampling round to provide the data needed to prepare groundwater contour maps. In addition, water samples have been collected from twelve locations in Lake Hallie on two occasions in the last five years to determine what, if any, effect the site has had on that surface water body.

Samples of the treated effluent have also been sampled and tested for chronic and acute toxicity using the whole effluent toxicity (WET) test. Sampling and testing were performed quarterly for one year, annual for five years, and bi-annual the last two years. The effluent has passed for all organisms in all sampling rounds. NPI recently submitted a letter to the WDNR requesting the discontinuation of WET testing. The WDNR has verbally concurred with the request and will provide written documentation in the near future.

An inspection of the active groundwater monitoring wells revealed that a number of them were in need of proper labeling and/or minor repairs. None of these issues affect the quality of the data obtained from the wells, and NPI is in the process of rectifying the well issues.

MRDS Cap and SVE System

An O&M plan was prepared for the MRDS cap and SVE system. The plan discusses the operation and monitoring requirements for both the cap and the SVE system and the QA/QC procedures. The plan describes how routine maintenance is to be conducted following manufacturers' recommended schedules and the sampling and analytical requirements. It was designed to be consistent with applicable state regulations.

Table 1 provides the approximate annual O&M costs for each of the various components of the remediation activities at these two sites from 1997 through the middle of 2002.

VII. PROGRESS SINCE LAST REVIEW

ECMWF Site

This is the second Five-Year Review for this site. The first Five-Year Review for this Site was concluded on September 29, 1998. During that review, the U.S. EPA concluded that the remedy selected for the ECMWF continued to be "protective of human health and the environment." It recognized that the air stripper and alternate water supply have been implemented and that groundwater quality at/near the ECMWF continued to improve. The recommendation was "that the City of Eau Claire continue operation of the air stripper, as designed, until final groundwater

cleanup levels set forth in the NPI ROD (below NR 140 PALs) are achieved.” During the subsequent five years, the City has continued to operate the air stripper, and analytical data confirm that it remains effective in removing the very low and decreasing concentrations of VOCs found in a few of the municipal wells. Additionally, the City continues to maintain its ordinance prohibiting cross connections between private wells and the municipal water supply system.

As indicated below, the data provided does indicate that the levels of VOCs in Plumes 1 / 2 are declining. However, the data shows that the influent to the air stripper has exceeded the Preventative Action Limits (PALs) for trichloroethene (TCE) and several of the individual wells have sporadically exceeded the PAL for TCE.³ Furthermore, there have been exceedances of the Maximum Contaminant Levels (MCLs) upgradient of the well field wells within the year. Therefore, taken as a whole, the system has not met the shut down criteria on a consistent basis.

TABLE 17 - City of Eau Claire North Well Field Air Stripper Influent Data⁴

<i>Year</i>	<i>DCE</i>	<i>DCA</i>	<i>TCA</i>	<i>TCE</i>	<i>PCE</i>	<i>TOTAL VOCs</i>
1998	ND	0.27	1.27	1.53	ND	3.52
1999	ND	0.21	0.94	0.87	0.08	2.10
2000	0.06	ND	0.46	0.38	ND	0.90
2001	0.07	ND	0.24	0.29	ND	0.60
2002	ND	ND	1.05	0.35	ND	1.40
PAL	0.7	NS	20	0.5	0.5	NA
MCL	7	NS	200	5	5	NA

DCE - Dichloroethene
DCA - Dichloroethane
TCA - Trichloroethane
TCE - Trichloroethene
PCE - Tetrachloroethene

All data in parts per billion
All data are yearly arithmetic averages except 2002 which includes January - June

NS= no standard NA= not applicable

At least some of the improvement in the ground water quality is probably due to the on-site pump and treat system (cascade aerators) implemented at the NPI site as an interim action. These

³ TCE is the most prevalent constituent of concern. The PAL is the WDNR's preventative action limit (PAL) and the applicable standard is 0.5 ug/L; the State Enforcement Standard (ES) for TCE in ground water is set at 5.0 ug/L; the federal MCL is the Maximum Contaminant Level for drinking water supplies and is set at 5.0 ug/L for TCE.

⁴ The influent to the air stripper is mixed raw water from five wells. Since the influent sample is a composite sample, it does not provide information regarding samples from the individual wells (from which the contaminant concentrations could vary) and does not account for the variability of pumping schedules for these wells. Therefore, the agencies will not use influent data in the decision making process for determining compliance with the groundwater standards.

cascade aerators are located near the source of the ground water contamination and remove and treat ground water upgradient of the ECMWF. The ground water removed and treated by the cascade aerator system is then discharged to the sewer. Although there are some concentrations of VOCs remaining in the ground water, the vast majority of this residual contamination is a result of the contribution from a relatively few number of the original 14 municipal wells. Additionally, what may initially appear as a slight increase of contaminant concentrations of the less chlorinated compounds, may actually be a result of the de-chlorination of more highly chlorinated compounds through natural chemical break down processes (i.e., natural attenuation). This continues to need monitoring to assure that the progress is continuing. In accordance with the RODs, the ground water clean up goals for the contaminants of concern are the PALs (which must be achieved within a reasonable period of time).

NPI has been encouraged to continue looking at possible upgrades to keep the air stripping towers operational as long as need be, whether it be as a result of EPA action or a result of necessity to modify the City water system due to changing needs of the City of Eau Claire.

NPI Site

This is also the second Five-Year Review for this site. The first Five-Year Review for this Site was concluded on September 25, 1998. In that review, the U.S. EPA found that "with the exception of three monitoring wells at/near the source area in the Southwest Corner, all VOC concentrations in the monitoring wells and extraction wells are below their respective MCLs/ESs." It further concluded that VOC concentrations in groundwater are stable or decreasing at both the MRDS and Southwest Corner, the extraction wells were removing VOCs and providing gradient control, and the cascade aerators were effectively removing VOCs from the extracted groundwater. The recommendation was that the operation of the extraction wells and cascade aerators continue until the final groundwater cleanup levels set forth in the NPI ROD are achieved. During the last five years, NPI has continued to effectively operate the pump-and-treat system and conduct routine monitoring of select monitoring wells. Based upon the reviews, it appears that the remedy is effective and that the levels are declining in the influent of the air strippers.

Removal/disposal of forge compound and contaminated soil from Lagoon #1, Drainage Ditch #3, Dry Wells #2 and #5, the southwest corner of Lagoon #2, the EDS, the loading dock area, and the southwest property corner have been completed during the last five years. In addition, the SVE system and multi-layer cap have been installed at the MRDS. All these actions have had and will continue to have a positive effect on the remediation of the site by helping to shorten the time frame until groundwater concentrations of all contaminants drop below the PALs and remain there, especially with Plumes 1 / 2, the last plume with off-site contaminant concentrations above the PAL and the limit of quantitation.

The Town of Hallie still has its ordinance prohibiting the installation of private wells. It also requires a permit for private wells that are still in use for non-potable uses. There are still 13 private wells in use in the Town, and all have permits.

VII. FIVE-YEAR REVIEW PROCESS

Administrative Components

Representatives of the WDNR, and the City of Eau Claire, and NPI were notified of the initiation of the Five-Year Review in June 2002. The review team included Sheri Bianchin of the U.S. EPA; Eileen Kramer of the WDNR; members of Gannett Fleming, NPI's consultant, Derrick Paul, Site Manager, NPI and Sam Spanel, P.E., Utilities Administrator, City of Eau Claire. Initial discussions regarding the five-year review began between the parties in January 2001. From June to September 2002, the review team reviewed historical data and documents and prepared the report. Sheri Bianchin of the U.S. EPA and Eileen Kramer of the WDNR completed the site inspection in early July, with the assistance of NPI and Gannett Fleming. Interviewed as part of the review process were NPI and the City of Eau Claire.

Community Involvement

The following meetings were held to review information and solicit comments as part of the review process:

- On August 2, 2002, an add was placed in the local paper, *the Chippewa Falls Leader-Telegram*, which covers Eau Claire and Hallie;
- Site inspection/ meeting on July 1, 2002 at the NPI Site;
- Site inspection/meeting on July 2, 2002, at the ECMWF Site.

This report documents the results of the five-year review. This document will become a part of the NPI site and ECMWF site Superfund files. In January 2001, Sheri Bianchin, the U.S. EPA Remedial Project Manager (RPM) notified the PRPs and the WDNR Site coordinator that the two Sites would be subject to a coordinated 5-year review during 2002 where the review was conceptually discussed. These 5-year reviews were conducted between March 2002 and September 2002. An on-site inspection occurred at the NPI site on July 1, 2002, and at the ECMWF Site on July 2, 2002. (Site Inspection Forms and photographs documenting site conditions are included herein as Appendix A & B, respectively) The U.S. EPA RPM lead the review with support from Eileen Kramer, WDNR site coordinator. The Community Involvement Coordinator, Susan Pastor placed an add in the local papers on August 2, 2002 to solicit public input in this review-copy attached. No comments were received. The public repositories are located at both the Eau Claire Library and the Town of Hallie

Document Review

These five-year reviews consisted of a reviewing relevant documents including the RODs, monitoring data, environmental media monitoring data, previous annual reports, and the previous five-year reviews.

VIII. MONITORING DATA REVIEW AND EVALUATION

Groundwater monitoring has been conducted at these sites since the early to mid-1980s. As mentioned previously, a new sampling protocol was approved by the U.S. EPA in March of 2002 to allow for low-flow purging and sampling since this is a superior method. Contaminant concentrations were generally highest early in the history of the sites and have decreased or dropped below the detection limits at some monitoring points through a combination of natural attenuation and active remediation. Initiation of remedial activities, most importantly source removal and the capture, removal, and treatment of contaminated groundwater at the NPI site, have resulted in a significant reduction in contaminant concentrations in the groundwater both on site and off site. The continued operation of the air stripper at the ECMWF removes the low and decreasing concentrations of VOCs that reach the well field. With the exception of three wells in the Southwest Corner of the NPI site, contaminant concentrations in the groundwater at both sites are generally stable at low concentrations and/or decreasing. Many wells no longer contain detectable concentrations of any of the five VOCs of concern. During the past five years, adjustments have been made in the monitoring schedule. In the past, the decisions on changes in or elimination of monitoring of a given well have been subjective. The U.S. EPA, WDNr, and NPI are in the process of developing a more objective and consistent protocol for evaluating monitoring well data and how it should impact the monitoring schedule for the site.

ECMWF Site

The data from the City's analysis of samples from the city wells (Table 2) show that since the last Five-Year Review in 1997, concentrations of TCE in the wells have shown a consistent decreasing trend. Of the five wells in the north well field, the only well that has had detectable concentrations of TCE in the last two years is well PW-19, the northern-most well and the one that is likely intercepting contaminated groundwater that reaches the city well field. Even in PW-19, the average TCE concentration has decreased from 4.48 µg/l in 1997 to 2.38 µg/l in 2001. The commingled raw influent going to the air stripper has shown a similar decrease from 1.33 to 0.43 µg/l.

In early 1999, NPI noted that the City's in-house detection limits on the in fluent and effluent samples were always two to three times what they had been historically (0.6 µg/l vs. 0.2 to 0.3 µg/l). Because the goal established in the ROD is to be below the PAL (0.5 µg/l), the data was now not as useful as it had been, since the detection limit was now above the PAL. In 2001, NPI began splitting samples with the City. The City uses EPA Method 8260 for its in-house analyses. NPI's contract lab used EPA Method 524.2, the SDWA-required method. Method 524.2 provides a detection limit of 0.1 to 0.15 µg/l, providing data on samples with concentrations within the critical range below 0.6 µg/l. In the five subsequent rounds of split sampling from March 2001 to April 2002, the results of the NPI samples showed that TCE, TCA, and DCA are present in the commingled raw influent at detectable concentrations (See Table 3). They also show that Method 8260 is apparently not as sensitive as Method 524.2. Based on the NPI data, TCE is the only compound of the three that is present in the commingled untreated raw water at a concentration above its PAL (0.721 to 1.09 µg/l).

Regardless of the in fluent concentration, effluent data following treatment in the air stripper (Table 3) continue to demonstrate that the selected remedy (air stripping) effectively removes all

VOCs to concentrations below their detection limits (0.10 to 0.15 $\mu\text{g/l}$) and thus below the state PALs and the federal MCLs.

ECMWF (Plumes 1 / 2)

The City of Eau Claire has eight monitoring wells (EC-1 to EC-8) around its north well field. These wells are considered to define the downgradient edge of Plumes 1 / 2 and are included in the discussion below about the Southwest Corner. VOCs have only been detected in three of the wells (EC-1, EC-2, and EC-6), but only EC-2 has had TCE concentrations above the NR 140 ES of 5.0 $\mu\text{g/l}$. This well is located immediately upgradient of the north well field and is located on or close to the centerline of the plume.

NPI Site

Air Emissions

An SVE system was installed beneath a multi-layer cap at the MRDS in 1998. Figure 3 shows the location of the SVE wells and the cap. The combination of the SVE system and the cap provide the selected remedy for the MRDS. For the first year of operation, the system operated with all three blowers on. Based on the results of the first year's analyses, the U.S. EPA and the WDNR approved operating the system with only one of its three blowers on.

The results of the monthly air monitoring are presented in Table 4. They show that the concentrations of TCA, the primary constituent of concern, are more than two orders of magnitude below the vapor phase threshold value, which is protective of the PAL in the groundwater.

Groundwater

Since the last Five-Year Review in 1997, groundwater quality has steadily improved within all plumes. The Annual Interim Reports that are submitted to the U.S. EPA and WDNR have documented this continuous improvement. The agencies are currently working with NPI to develop a more streamlined report and a method of objectively evaluating the groundwater data. The goal is to make the report easier to review and provide criteria by which the data, and thus monitoring frequencies, can be evaluated and, if appropriate, revised. Currently, a total of 73 wells are part of the monitoring plan for the NPI site. Sampling frequency ranges from quarterly to annually, depending on the location of the well, its purpose, and the history of analytical data from the well. The locations of the three areas (MRDS, EDS, and Southwest Corner) of the site and all wells are shown on Figure 1.

The depth to groundwater is measured in all on-site and select off-site wells at the beginning of each sampling round. Table 5 contains all groundwater elevation data since June 1997. The data are used to construct groundwater flow maps of the entire site and each of the three individual areas at the site. Figure 4 is a groundwater flow map for the entire site. The flow direction has remained the same over the years; only the groundwater elevation changes. This figure, along with the analytical data, document that the existing extraction wells provide adequate gradient

control to contain and recover any remaining contaminated groundwater in the areas of the Southwest Corner and MRDS.

Southwest Corner (Plumes 1/2)

Currently, a total of 38 wells (22 on site and 16 off site) are being monitored in this plume, excluding the eight EC wells at the ECMWF. As noted above, the groundwater flow direction has remained constant. Figure 5 is a groundwater flow map for this area of the site using data from the April 2002 sampling round. Table 6 presents the analytical results for the Southwest Corner wells since August 1997. In general, the concentrations are stable or decreasing. Since August 1997, four on-site wells have contained concentrations of one of the five VOCs of concern above the U.S. EPA's Maximum Contaminant Levels (MCLs)/WDNR's enforcement standards (ESs). Most of the concentrations in these wells are relatively low and decreasing, and one of these four wells has not had an MCL/ES exceedance in four years. Three wells, MW-34A, MW-70A, and MW-70B, are an exception. These wells are all located west of former Lagoon #1 and south of extraction well EW-3. They were the three wells identified in the last Five-Year Review as having exceedances of the MCLs/ESs. VOC concentrations in these wells have recently begun to show an upward trend.

The groundwater extraction wells in this area of the site (EW-3 and EW-4) had originally been sampled on a monthly basis. In February 1999, the U.S. EPA agreed to decrease the monitoring frequency to quarterly. Table 7 contains the analytical results for the Southwest Corner extraction wells since August 1997. The data document that VOC concentrations are stable or decreasing in both wells. TCE is the only compound that routinely exceeds its PAL in these wells. The higher TCE concentrations in EW-3 are likely due to the fact that it is closer to the former source area and intercepts much of the groundwater from it. TCE concentrations in both wells are below the MCL/ES.

NPI's consultant, Gannett Fleming, has analyzed the active remediation and natural attenuation associated with this plume and prepared reports on the data on several occasions in the past few years. These documents have been shared and their findings discussed with the U.S. EPA. These documents conclude that there has been a documented and significant decrease in the size of the TCE plume and the concentrations within the plume as a result of the completed remedial actions and ongoing pump-and-treat activities by NPI and natural attenuation within the plume itself. Continued operation of the pump-and-treat system in the Southwest Corner to control off-site migration and natural attenuation within the plume will continue to result in a decrease in both the size of the plume and the TCE concentrations within the plume.

Dissolved cadmium has been identified in several monitoring wells in the Southwest Corner. Samples from monitoring wells MW-10A, MW-10B, MW-11A, MW-11B, MW-34A, MW-34B, and PW-1 have been analyzed for dissolved cadmium. The data show that while several of these wells have had an exceedance of the PAL and even an occasional exceedance of the MCL/ES, only MW-10A has consistently exceeded the MCL/ES. Table 8 shows the dissolved cadmium concentrations in these wells since the last Five-Year Review.

MRDS (Plumes 3/4)

Monitoring of 18 monitoring wells (7 on site and 11 off site) continues at this part of the site. Contaminant concentrations in all wells have remained steady or decreased since 1997. As was the case five years ago, none of the wells have contained concentrations of any contaminants above their MCLs/ESs, which means that there have been no exceedances since at least 1994. Eight of the wells (3 on site and 5 off site) have had concentrations above the PAL. It should be noted that half of these "PAL exceedances" are below the limit of quantitation. None of the remaining ten wells have had concentrations above the PAL since the last Five-Year Review, and two of them are consistently below the detection limit. Table 9 contains the analytical results for the MRDS monitoring wells since August 1997. As noted above, the direction of groundwater flow beneath this portion of the site has remained constant during the past five years. Figure 6 is a groundwater contour map for the MRDS constructed using data from the April 2002 sampling round.

The groundwater extraction wells had originally been sampled on a monthly basis. In February 1999, the U.S. EPA agreed to decrease the monitoring frequency to quarterly. Table 10 contains the analytical results for the MRDS extraction wells (EW-1R and EW-2) since August 1997. The data document that VOC concentrations are stable or decreasing in both wells. Concentrations in both wells have been below the MCLs/ESs for all VOCs of concern. The only time either well contained TCE at a concentration above the PAL was in August 2001, when both were slightly above the PAL. During the past five years, PCE has been present at concentrations above its PAL in EW-2. However, PCE concentrations have been below the PAL in EW-2 since November 1998 and below the detection limit since August 1999. Thus, VOC concentrations, with the exception of TCE in August 2001, have been below the PALs in both wells for almost four years.

EDS (Plume 5)

This area of the site was not addressed in the last Five-Year Review. Five on-site monitoring wells, one off-site monitoring well, and three off-site downgradient private wells are monitored for this area. None of the wells have contained any of the VOCs of concern at concentrations above their respective MCL/ES. Only four wells (MW-17C, MW-19, MW-72, and MW-73) have ever had concentrations above the PAL. None of the remaining five have had concentrations above the PAL, and two of the five are below the detection limit.

Table 11 contains the analytical results for the EDS monitoring wells since August 1997. As noted above, the direction of groundwater flow beneath this portion of the site has remained constant during the past five years. Figure 10 is the most recent groundwater contour map for the EDS.

Extraction Well Pumping Volumes and Cascade Aerator Removal Efficiency:

Extraction wells EW-1R and EW-2 at the MRDS and EW-3 and EW-4 in the Southwest Corner are used to remove contaminated groundwater and provide hydraulic gradient control in these two areas of the site. Groundwater pumped from the MRDS and Southwest Corner areas is

discharged to cascade aerators CAS-1 and CAS-2, respectively. The aerators remove VOCs from the contaminated groundwater by volatilization before discharging the groundwater to the City of Eau Claire storm sewer system and ultimately to the Chippewa River.

Table 12 provides a summary of the annual volumes of contaminated groundwater pumped since 1996 from MRDS extraction wells EW-1R and EW-2 to CAS-1 and from the Southwest Corner extraction wells EW-3 and EW-4 to CAS-2. The table also provides the total volume discharged to the storm sewer.

Tables 13 and 14 show the influent concentrations of TCE and TCA, respectively, to the cascade aerators. The tables also provide the effluent concentrations from the cascade aerators, their removal efficiencies, and the combined concentrations of both compounds from the cascade aerators. The tables document that the TCE and TCA removal efficiencies of the aerators has ranged from 24 to 100 percent in the MRDS and 36 to 55 percent in the Southwest Corner. With one exception in May of 1999, both are above the target VOC removal rate of 25 percent.

WET testing of the combined discharge from the cascade aerators has consistently showed no toxicity to the test organisms. The effluent has never failed a test for any of the organisms. These data confirm that the treated effluent from the NPI site is not adversely impacting the Chippewa River. Based on these results and the overall trend of decreasing concentrations of VOCs in the monitoring wells, the WDNR has agreed WET testing is no longer needed at this site.

Surface Water Monitoring

Water samples were most recently collected from twelve locations in Lake Hallie on two occasions in 1999. Toluene and xylenes were present in all samples, most at concentrations below the limit of quantitation. The presence of these chemicals may be the result of storm water runoff from roads and/or boat motors. The only detected VOCs of concern were TCA and TCE. In the 24 samples, TCA was detected three times and TCE once. All concentrations were below their respective PALs and below the limit of quantitation. Table 15 contains the analytical results from the two 1999 Lake Hallie sampling rounds. Figure 11 shows the sampling locations in Lake Hallie. These data appear to confirm that the NPI site is not adversely affecting Lake Hallie. The agencies will explore this further with the PRPs.

SITE INSPECTION

NPI Site

On July 1, 2002, the parties who are indicated on the attached attendance log (See Appendix A) met for a site walk-through of the NPI Site. After a sit down discussion, they proceeded to drive around the site to the various operable units or significant areas of contamination.

Site Access and Institutional Controls

Access to most of the property is limited by a gated area and guard. An area on the eastern portion of the site was not fenced. NPI representatives explained that the a private security firm patrolled the area. Posted signs advised as such.

Many of the areas are also subject to concurrent review by the WDNR to evaluate whether further action is required by the State per closure requests submitted by NPI. WDNR is in the process of reviewing these requests for closure.

Site access controls and local zoning restrictions were confirmed to be in-place. However, the other required institutional controls (i.e, deed restrictions) were not confirmed to be in-place. The remedy at the site requires deed restrictions preventing future residential land use. When asked about the deed restrictions, NPI expressed that they hoped that they can further refine the areas requiring deed restrictions and the specific types of controls required so that the entire property will not be fully restricted. That way, some of the property may be released for an appropriate future land use. U.S EPA and WDNR will work with NPI to further define these institutional controls so that NPI can secure them and get them in-place.

Source Areas

Lagoon 1 and Melby Road Disposal site are the areas that were reported in the past to be the areas of most significant contamination.

Lagoon 1

Lagoon 1 has been excavated, subject to soil vapor extraction (SVE) and revegetated. It was reiterated during the inspection that through the monitoring program, there has recently been identified a slight increase in ground water contamination in that area and that the PRP-site owner through their contractor Gannett Fleming has submitted a work plan to investigate soils in this area. Discussions are underway between NPI and U.S. EPA and WDNR regarding the scope of that work and it is expected that the work will be undertaken this year.

Loading Dock Area

The area adjacent to the former Lagoon 1 and near the warehouse on the south side of the property is termed the loading dock area. When expanding the parking lot near to the warehouse, earlier this year, discolored soils were encountered which appeared to be typical of soils impacted by "forge compound." After submission of a work plan, and approval by U.S. EPA, approximately 1,100 cubic yards of soils were excavated and disposed of off-site. Most of the area was then capped with road paving. The attendees also observed the area that was subject of the excavation earlier in the year. Because not all of the visibly stained soils were removed, deed restrictions are needed to prevent future residential land use. This area will also be subject of review by the WDNR to evaluate whether further action is required per closure requests by NPI.

Lagoon 2

The former lagoon 2 area was also observed. Although this area was not subject to a remediation under the existing RODs. Excavation occurred in this area during the 2000- 2001 years. Upon draining the remaining standing water in the former Lagoon 2, impacted soils were noted in the corner of the former Lagoon 2. Upon submission of a work plan and approval by U.S. EPA, NPI excavated and disposed of the most of the impacted soils (approximately 3,000 cubic yards). Although the area was backfilled, one vein of contamination was surveyed and noted as needing further investigation to determine whether to excavate or leave in place with proper property restrictions/ institutional controls. Discussions are underway between NPI and the U.S. EPA and WDNR regarding the most appropriate response to the vein of contamination. This area will also be subject of review by the WDNR to evaluate whether further action is required per closure requests by NPI.

Melby Road Disposal Site (MRDS)

The attendees also walked across the MRDS. The landfill area is fenced, gated and locked. The cap was in-tact and well-vegetated in most places. However, there were several breaches noted by either animal burrows or erosion. The slightly eroded area with poor vegetation was found on the slope on the south side of the cap and the retention basin south of the capped fill areas. The animal burrows were found on the west side toward the north. These were noted during the inspection as needing repair. Furthermore, an area at the base of the cap, composed primarily of sandy soil was not well-vegetated. It was discussed and the Gannet Fleming representative stated that, in the past, it was decided to leave that area undisturbed as it serves as a natural sink for water which is diverted away from the cap and is slowly developing native vegetation.

The attendees also looked at the SVE system and extraction wells while walking across the landfill. They inspected the control room which operates and records information for the soil vapor extraction system utilized at the MRDS.

The SVE system used in conjunction with the cap reduces contaminant migration to groundwater by creating a vapor barrier and removing VOCs. The SVE system has been installed as a barrier between the areas of forge compound disposal and the groundwater reducing VOCs in the vadose zone, reducing potential migration of vapors beyond the boundaries of the cap. The SVE was installed so that the forge compound disposed of at the Melby Site will not require excavation and disposal off-site. The primary objective of the SVE is to capture the VOCs diffusing from the forge compound before they impact the groundwater. The ground water has shown a declining trend since start up of the SVE system. Operation of the SVE has been modified. Discussions are underway regarding modifying the system operations.

Ground Water

The attendees observed the extraction wells in the Southwest Corner of the Site. The attendees observed the two cascade aerators that are used to remove VOCs from the captured water prior to discharge.

The attendees tasked themselves to inspect the groundwater monitoring wells which are utilized in the monitoring program. They went around the site to locate and observe each monitoring well utilized in the monitoring program. A log was kept of the following information: whether it could be located; the condition of the well; whether it was marked and secured and locked. The results are that all of the wells met those conditions. There were a number of wells (i.e., 38) with inadequate labels and or locks. The detailed list was sent to Gannet Fleming advising them of the wells that needed repair.

No new uses of groundwater were observed in the area.

Closed Areas

The attendees looked over the closed areas which were the Dry Wells, Drainage Ditch #3, Lagoon #1, Lagoon #2, and East Disposal Sites.

Eastern Disposal Site (EDS)

The former EDS and drainage ditch 3 were observed. For both of these areas, the contaminated soils were excavated and placed under the cap at the MRDS.

Dry Wells 2 and 5

The areas which were the former Dry wells 2 and 5 were observed. The contaminated soils and sediments were removed and disposed of off-site.

ECMWF Site

On July 2, 2002, the attendees who are indicated on the attached attendance log met for a site-walk through of the ECMWF Site. After a sit-down discussion, they proceeded to drive around the site to observe the air stripper, and the various wells associated with the municipal well system.

The air stripper was well-maintained. Although the towers were originally designed for a 5-year life expectancy (as an interim action), they have operated much longer. While they are showing some signs of wear along with the building, they are still adequate. Whether they need to be upgraded, such as gel-coated, will depend upon how long they may need to operate. In 1999, the City tasked McMahon and Associates to evaluate the air stripping towers as to their usefulness and life expectancy and to suggest any upgrades. (A report attached in Appendix C describes this evaluation.) Based upon the recommendation contained in that evaluation, the City has conducted several upgrades to the treatment system. In 2000, the City ran a fiber optic line and installed new instrumentation and updated control panel. The towers can be operated both at the

control room adjacent to the air stripping towers or remotely from the treatment plant. The controls among other things were recently upgraded, computerized and are state-of-the art. In 2001, the chlorination system was upgraded to a sodium hypochlorite system to address the safety concerns of working with chlorine. The City is taking the additional recommendations under advisement and prioritizing the action items for possible further action. One of the recommendations was to change the configuration of the extraction wells; however, this recommendation has now been ruled out by Gannet Fleming NPI's consultants, as being not as efficient as the present configuration. Since NPI currently is funding 90% of the costs, they will have a say in this matter. Therefore, the configuration will not change.

One problem was noted during the inspection. The City was in the process of painting various components and had small solvent containers left unattended in the control room. This was noted and remedied.

The attendees tasked themselves to inspect the groundwater monitoring wells associated with monitoring the remedy at the ECMWF Site which are utilized in the monitoring program. They went around the site to locate and observe each monitoring well utilized in the monitoring program. A log was kept of the following information: whether it could be located; the condition of the well; whether it was marked and secured. The results are that all of the wells met those conditions.

Interviews

Interviewed for this review were, Derrick Paul, Site Manager, NPI and Sam Spanel, P.E., Utilities Administrator, City of Eau Claire, NPI's consultants, Gannet Fleming, and Jim Nyre, Town of Hallie's water utility.

IX. TECHNICAL ASSESSMENT

Question A: Is the remedy functioning as intended by the decision documents?

ECMWF Site

The review of the analytical data from the monitoring wells, production wells, and the air stripper confirm that the selected remedy is continuing to function as intended by the ROD.

NPI Site

The review of the groundwater monitoring results, remedial system monitoring results, and the site inspection document that the selected remedies are functioning as intended by the RODs.

In addition, the Town of Hallie has an ordinance in place that prohibits the installation of private wells and a permit program for those residents that have retained their private wells for non-potable uses. The City of Eau Claire does not allow cross connections between private wells and the municipal supply piping. In addition, any new private wells require county review and approval.

The removal of waste forge compound and contaminated soils from the various source areas at the site has eliminated the source of contamination in these areas. The continued operation of the extraction wells and air strippers are effectively removing VOCs as intended in the ROD.

Capping of the MRDS and the installation and operation of the SVE system over the past four years have effectively contained and controlled the waste material at the MRDS. The cap has been maintained as required.

The monitoring well network that is in place on site and off site combine to provide the data needed to assess the effectiveness of the selected remedies.

Summary of Sites

The combined cost to operate and maintain the selected remedies at both sites is approximately \$200,000 per year. All aspects of the remedial systems are operating as designed. There are no indications of problems with any of the systems. This review identified the following opportunities for system optimization:

- Creation and adoption of standard criteria for evaluating groundwater monitoring results and making adjustments to the monitoring schedule.
- Adjustments to the monitoring schedule for the SVE system.
- Adjustments to the operation of extraction wells EW-1R and EW-2.

The elevated concentrations in three wells in the Southwest Corner indicate the presence of a small area of remaining contamination in their immediate vicinity. The current extraction wells in this area are containing and removing these contaminants. NPI has prepared and submitted a work plan to conduct further subsurface investigation in this area.

Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy still valid?

There have been no changes in the physical conditions of the site that would affect the protectiveness of the selected remedies at these sites. Neither has there been any substantive change in the use of the properties during the last five years.

There have been no changes in either the contaminant characteristics/toxicity or the federal (SDWA) or state (NR 140) standards for protection of groundwater as they relate to the contaminants of concern at these sites.

Four new areas of contamination were identified during the past five years - the east extension of former Lagoon #1, the southwest property corner, the southwest corner of former Lagoon #2, and the loading dock area. Contamination in each area has been addressed. The waste forge compound mixed with soil in the east extension of Lagoon #1 and the small volume of contaminated surficial soils at the southwest property corner were excavated and consolidated under the cap at the MRDS. Reports on the loading dock area and the southwestern corner of Lagoon #2 are expected to be submitted to the agencies soon.

In general, contaminant concentrations continue to decline at both the ECMWF and NPI sites. The selected remedies have been and continue to be effective in reducing the risk to human health and the environment.

The state and federal agencies will explore further whether natural attenuation of the contaminants may be occurring in the groundwater, and if so, to what extent. The agencies will also explore the use of the WDNR's GIS registry for sites which are closed sites with residual contamination in both soil and groundwater. Given these concepts, there may be added assurance and extra layers of protection that the site will not be used for inappropriate future uses.

Question C: Has any other information come to light that could call into question the protectiveness of the remedies?

While newly identified contamination has been found, these areas have either been addressed or are in the process of being addressed. NPI has been expeditious in working through these issues and identifying solutions. Even with the new information at the NPI site, the protectiveness of the remedy is not called into question. No new information has been identified in the last five years at the ECMWF Site that would call into question the protectiveness of the selected remedies at that Site.

Summary of Technical Assessment

Based on the data reviewed, the site inspection and the interviews, the remedies for both sites are functioning as intended by the RODs. There have been no changes in the physical conditions of the sites that would affect the protectiveness of the remedies at either site. In addition, there have been no changes in the groundwater standards, either federal or state, for the contaminants of concern.

X. ISSUES

The following issues related to the two sites require action.

Issue	Currently Affects Protectiveness ?	Affects Future Protectiveness ?
VOC concentrations have recently increased in three monitoring wells (by MW-34A, MW-70A, and MW-70B) in the Southwest Corner	No	No
No apparent objective criteria are in-place for efficiently evaluating groundwater monitoring data	No	No
A number of groundwater monitoring wells need to be labeled/repared.	No	No
Several areas of the MRDS landfill cap need to be repared.	No	No
Lagoon #2 and Loading Dock area removals need to be documented.	No	No
Small containers of solvents were stored in the treatment building which is near the in fluent to the air stripping towers because the piping was being painted	No	No
Specific deed restriction requirements need to be determined with consultation to the agencies, secured and reported to the agencies	No	Maybe

ECMWF Site

The current air stripping operation is effectively removing the low concentrations of VOCs in the groundwater pumped by the city's north well field. The results of the monitoring of the NPI groundwater monitoring wells and those of the City from the production wells should be reviewed and evaluated on a regular basis (such as annually) to determine whether the continuous operation of the air stripper is needed. The basis of the evaluation of the results from the production wells should be tied to the results from samples analyzed using EPA Method 524.2.

The City of Eau Claire agreed not to store containers of solvent in the treatment building even when painting the piping.

NPI Site

The upward trend in VOC concentrations in the three monitoring wells (MW-34A, MW-70A, and MW-70B) in the Southwest Corner should be investigated by NPI and appropriate action taken to address the source of these increasing concentrations.

Long-term groundwater monitoring should continue in all three primary areas of the site. The parameters of concern should remain unchanged. The wells to be monitored and the monitoring frequencies should be established based on reasonable and consistent criteria and reevaluated annually based on that same criteria. NPI has submitted a proposed draft of these criteria to the U.S. EPA and the WDNR for review. The agencies will review and comment on the draft and incorporate it into the annual review process. These criteria will ensure a consistent and conservative evaluation of future groundwater monitoring results.

The sampling program of Lake Hallie will be explored by the agencies upon request by the PRPs to demonstrate that ROD requirements have been satisfied.

The operation of the extraction wells and accompanying cascade aerators have been effective. The continued operation of these units and modification of the operations can be evaluated for opportunity for optimization based on a review of the historical data from the SVE system for the MRDS area, the monitoring wells, and the extraction wells. This modifications will be explored by the agencies upon request by the PRPs to demonstrate that ROD requirements have been satisfied.

Based the presence of a municipal water supply for the residents of the Town of Hallie, the absence of VOCs in the SVE exhaust at the MRDS, and the fact that, with a single exception, VOC concentrations in the MRDS extraction wells have been below the NR 140 PALs for almost four years, the U.S. EPA and WDNR will explore modifying the ground water extraction and treatment system at the MRDS.

The annual data summary should continue to be prepared and presented by NPI to the U.S. EPA in a succinct manner at the end of each year for review and comment. The criteria mentioned above for evaluating the monitoring schedule should be used to determine what, if any, changes should be made to the monitoring program. The combination of all the data should be used to identify what changes, if any, are appropriate for the remedial systems.

The monitoring wells identified during the site inspection as needing to be labeled/repared should be labeled and /or repared by NPI. This will be done by the next quarterly monitoring round.

Reports documenting the remedial actions in former Lagoon #2 and the loading dock area and requesting no further remedial action for soils should be prepared and submitted by NPI for review by the U.S. EPA.

Recent changes in federal and state codes that allow risk-based closure and facilitate closure of sites with residual contamination may be appropriate for these sites in the future. This may be factored into the analysis of the types of deed restrictions required for the property

XI. RECOMMENDATIONS AND FOLLOW-UP ACTIONS

Issue	Recommended Follow-ups	Party Responsible	Oversight Agency	Milestone Date	Affect Current Protectiveness? (Y/N/ maybe)	Affect Future Protectiveness? (Y/N/ maybe)
VOC concentrations have recently increased in three monitoring wells (by MW-34A, MW- 70A, and MW-70B) in the Southwest Corner	Investigate area and recommend action if necessary	PRPs	U.S. EPA/ WDNR	3/31/03	No	No
No apparent objective criteria are in-place for efficiently evaluating groundwater monitoring data	Modify Ground water monitoring program and reporting	PRPs	U.S. EPA/ WDNR	06/30/03	No	No
A number of groundwater monitoring wells need to be labeled/repared	Label/ Repair monitoring wells	PRPs	U.S. EPA/ WDNR	12/31/02	No	No

Several areas of the MRDS landfill cap need to be repaired.	Repair landfill cap and revegetate	PRPs	U.S. EPA/WDNR	06/30/02	No	No
Completions of Lagoon #2 and Loading Dock area removals need to be documented	Finalize documentation	PRPs	U.S. EPA/WDNR	06/30/03	No	No
Small containers of solvents were stored in the treatment building which is near the in fluent to the air stripping towers because the towers were being painted	Remove containers of solvents from the building	City of Eau Claire's Utility Dept.	U.S. EPA/WDNR	Immediate	No	No
Specific deed restriction requirements need to be determined with consultation to the agencies, secured and reported to the agencies	Further refine areas subject to deed restrictions, secure deed restrictions and report to agencies	PRPs	U.S. EPA/WDNR	09/29/07	No	Maybe

XII. STATEMENT OF PROTECTIVENESS

The selected remedies for both sites have been implemented and are protective of human health and the environment. Over the last five years, waste forge compound and contaminated soils have been removed from the east extension of Lagoon #1, Drywells #2 and #5, the Drainage Ditch, the southwest property corner, the southwest corner of Lagoon #2, the loading dock area, and the EDS. An SVE system and multi-layer cap at the MRDS have been installed and are operating as

designed. The groundwater pump-and-treat systems at the MRDS and Southwest Corner have been operated continuously and have been effective in controlling and capturing the contaminated groundwater. WET tests of the effluent have demonstrated that the effluent is not toxic to aquatic organisms. These remedial actions have been implemented pursuant to the RODs and the recommendations of the last Five-Year Reviews for these sites.

The remedy at all site areas currently protects Human Health and the Environment because of the following:

- Access to the site is restricted;
- Much of the source areas have either been removed or consolidated and contained at the Melby Road Disposal Site;
- Operation of the groundwater extraction system and cascade aerators continues to control off-site releases of groundwater contamination and treat the volatile organic compounds in the groundwater;
- The soil vapor extraction system and the cap over the Melby Road Disposal Site continues to contain the hazardous and non-hazardous waste on-site, and protect the groundwater from further degradation;
- The groundwater monitoring program monitors the groundwater to assure that the remedy is effective and to detect whether any new release have occurred;
- Continuing O & M per the approved plans.

New information has become available in several areas of the site since the last five-year review which has prompted actions at several areas. These areas have either been addressed or are being addressed through investigation and appropriate action.

Long-term protectiveness will be achieved by ensuring that the following actions take place:

- Continued operation of the remedial action components including the continued operation of the extraction wells, cascade aerators, and soil vapor extractions system;
- Continued groundwater sampling, and continued operation and maintenance of all components.
- Other necessary follow-ups include repair of the monitoring well network, repair of several areas on the cap, and clarifying the types of restrictions required by the RODs and post-ROD actions and securing the deed restrictions;

Because the remedial actions at all the site areas are protective, the site is protective of human health and the environment.

With the continued operation of the remedial action components which were a part of the interim and full site-wide remedy by limiting access to the Site; operation of the extraction wells and the cascade aerator; performing groundwater monitoring; continued operation of the SVE system and maintenance of the cap along with maintaining all the remedial components according to the approved O & M Plan, and following up on the newly-identified areas of contamination; and instituting the deed restrictions, the remedy for the NPI Site remains protective of human health and the environment.

ECMWF

With the continued operation of the remedial action consisting of operation of the air stripper, and the continuation of the groundwater monitoring program pursuant to the ROD and approved O & M Plan, the remedies selected for the ECMWF site remain protective of human health and the environment.

XIII. NEXT FIVE-YEAR REVIEW

The next Five-Year Review will again be coordinated to include both the NPI site and the ECMWF. It will be required by September 2007, five years from this date. It will again evaluate the groundwater monitoring program, the SVE system and multi-layer cap at the MRDS, the cascade aerators, and the air stripper at the City of Eau Claire's North Municipal Well field. In addition, it will include information from the areas which either have or are undergoing further investigation and any remediation that may occur in the Southwest Corner, relative to the recent increased concentrations of VOCs observed in monitoring wells MW-34A, MW-70A, and MW-70B, and the loading dock.

**NATIONAL PRESTO INDUSTRIES
AND EAU CLAIRE MUNICIPAL WELL FIELD
CONSOLIDATED
FIVE YEAR REVIEW
FIGURES**

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PROJECT

FIVE-YEAR REVIEW REPORT
NATIONAL PRESTO INDUSTRIES, INC.
EAU CLAIRE, WISCONSIN

TITLE

AREA SITE PLAN WITH
GROUNDWATER AND SURFACE
WATER SAMPLE LOCATIONS



Gannett Fleming

HARRISBURG, PENNSYLVANIA

MADISON, WISCONSIN

DRAWN BY
LAC

SCALE
1" = 700'

DESIGNED BY
DJO

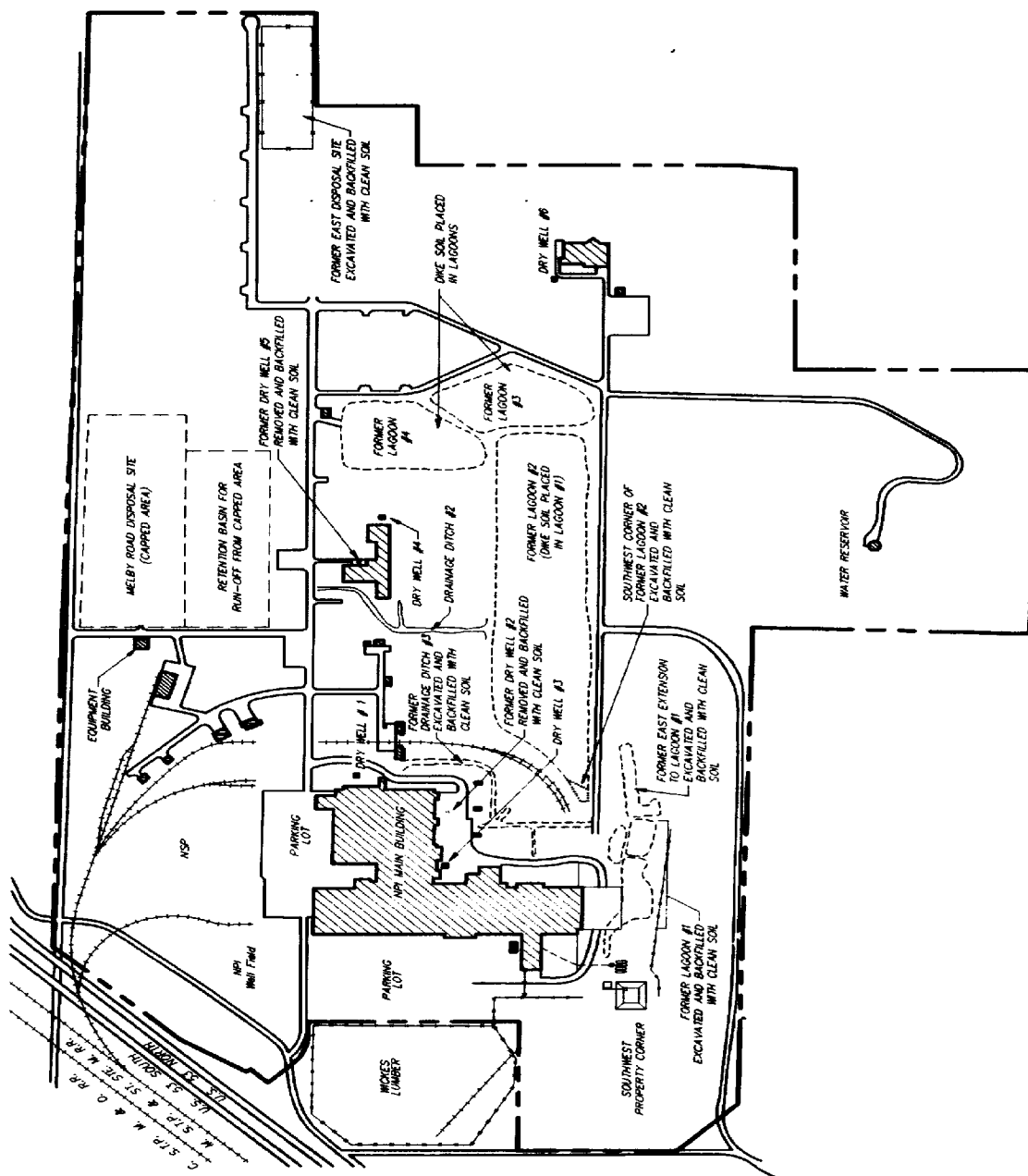
PROJECT No.
34286.010

APPROVED BY
DFK

DWG. No.

DATE
AUGUST 2002

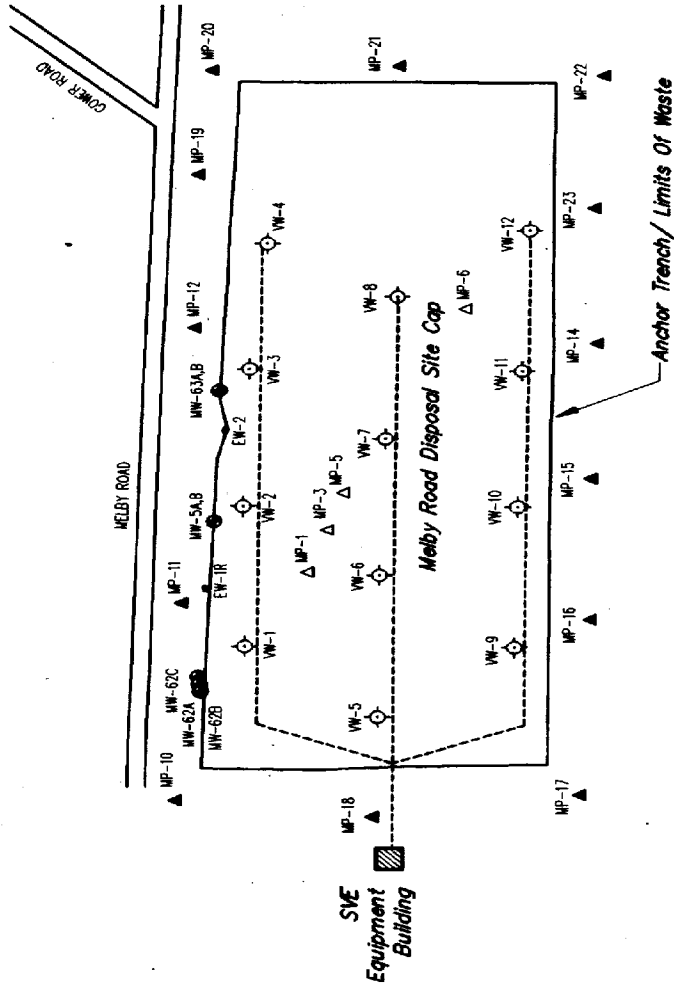
FIGURE 1



SITE PLAN
FIVE-YEAR REVIEW REPORT
NATIONAL PRESTO INDUSTRIES, INC.
EAU CLAIRE, WISCONSIN

Approximate
Scale In Feet

191902
34286WOF_REV



LEGEND

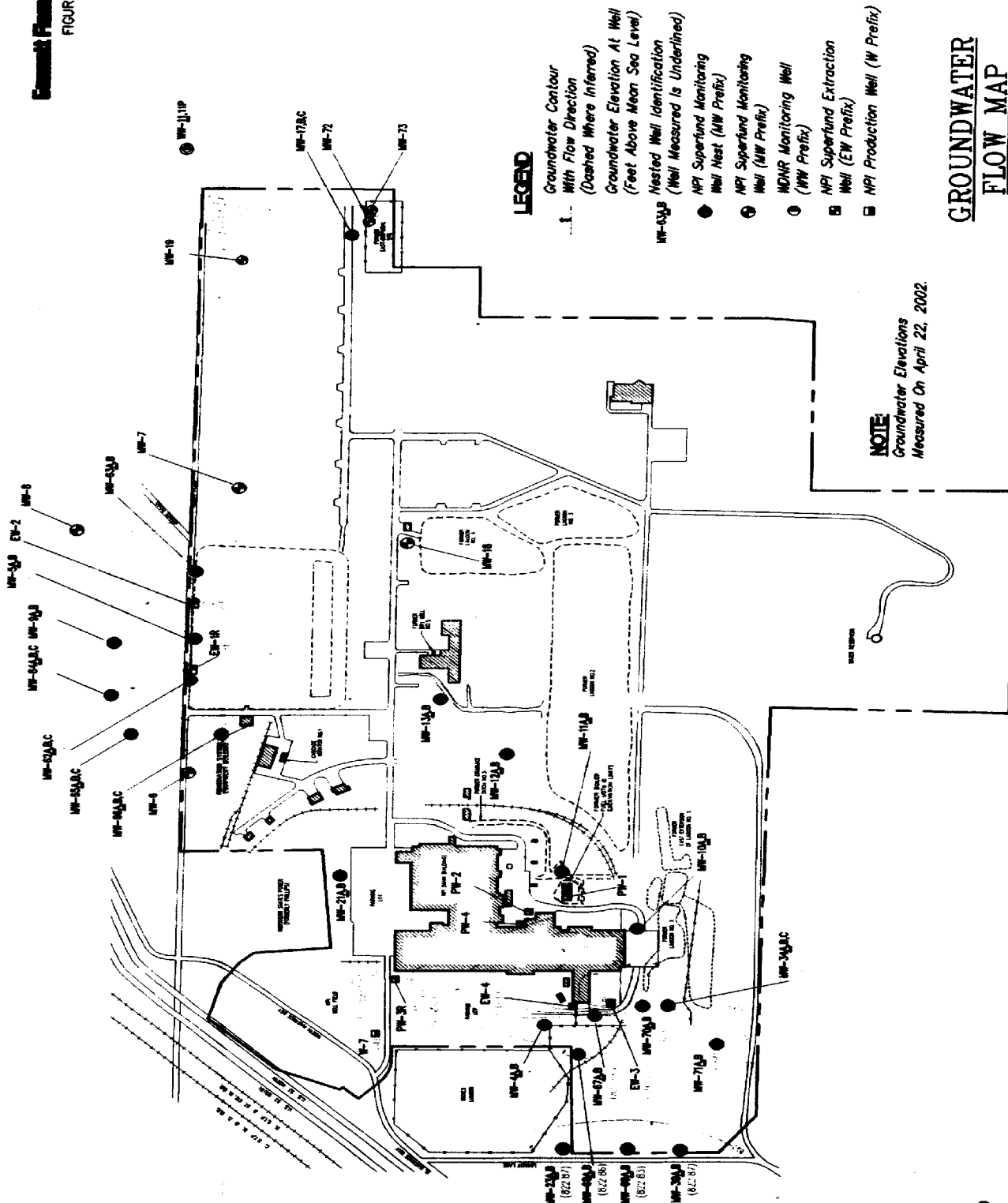
- Soil Vapor Extraction Vent Well
- △ Perimeter Soil Gas Monitoring Point
- △ Interior Soil Gas Monitoring Point
- ⊗ Groundwater Monitoring Well
- ⊗ Groundwater Extraction Well
- Underground Piping For SVE

MELBY ROAD DISPOSAL SITE WELL AND MONITORING POINT LOCATIONS

FIVE-YEAR REVIEW REPORT
NATIONAL PRESTO INDUSTRIES, INC.
EAU CLAIRE, WISCONSIN



081902
34286WBF



GROUNDWATER FLOW MAP (APRIL 2002)

FIVE-YEAR REVIEW REPORT
NATIONAL PRESTO INDUSTRIES, INC.
EAU CLAIRE, WISCONSIN



(APRIL 2002)

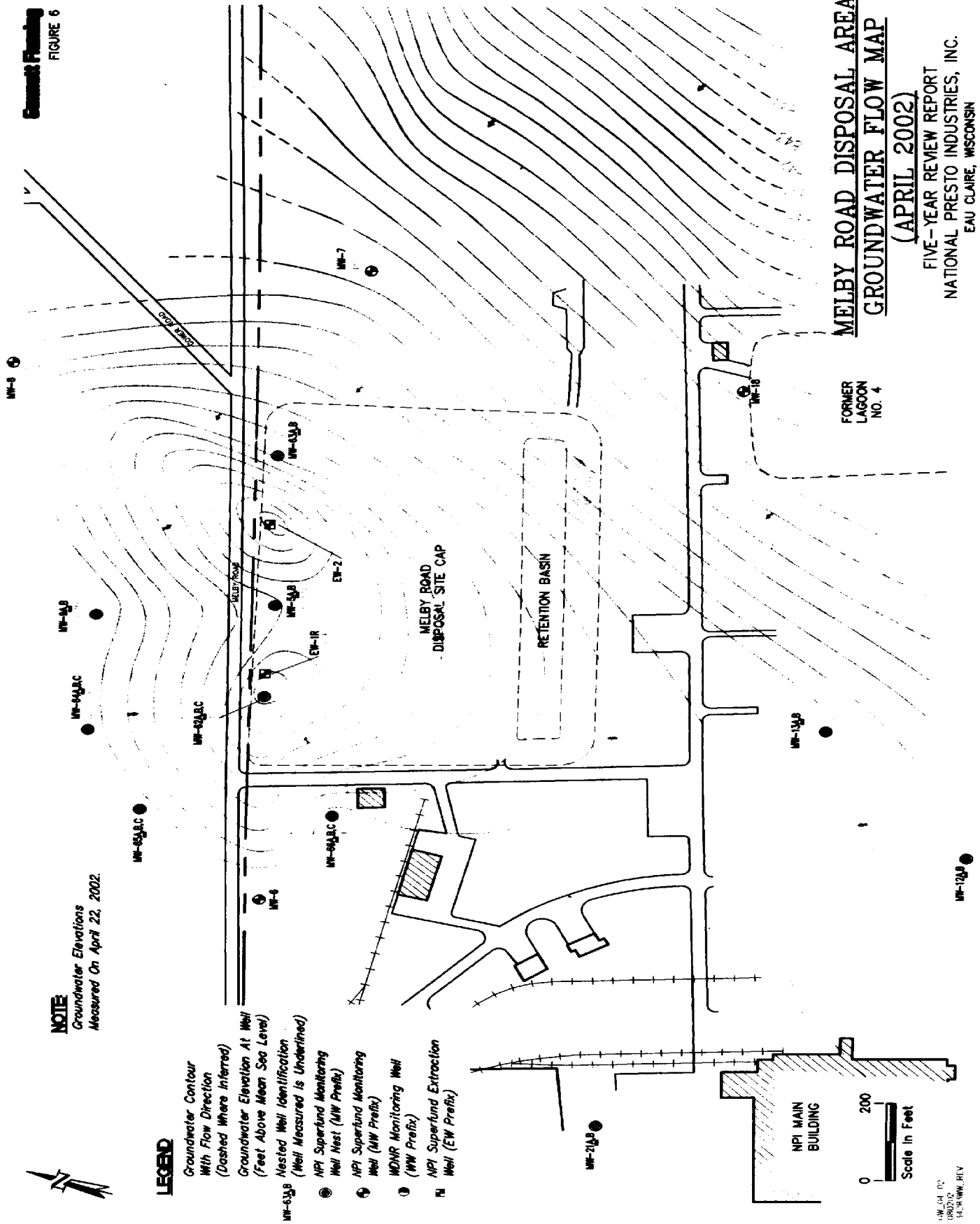
FIVE-YEAR REVIEW REPORT
NATIONAL PRESTO INDUSTRIES, INC.
EAU CLAIRE, WISCONSIN

NOTE

Groundwater Elevations
Measured On April 22, 2002.

LEGEND

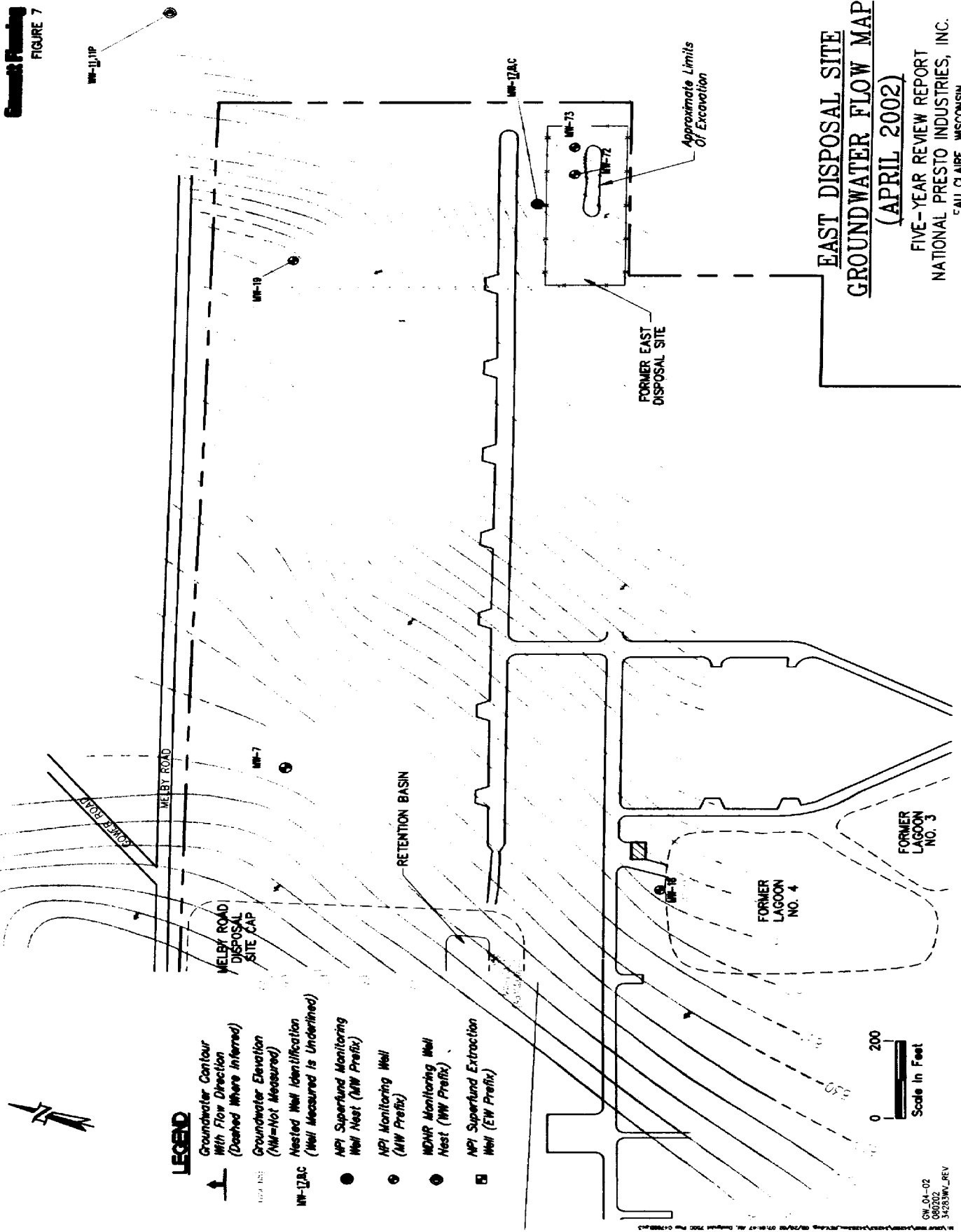
- Groundwater Contour
With Flow Direction
(Dashed Where Inferred)
- Groundwater Elevation At Well
(Feet Above Mean Sea Level)
- Nested Well Identification
(Well Measured is Underlined)
- NPI Superfund Monitoring
Well Nest (MW Prefix)
- NPI Superfund Monitoring
Well (MW Prefix)
- WDNR Monitoring Well
(WW Prefix)
- NPI Superfund Extraction
Well (EW Prefix)



**MELBY ROAD DISPOSAL AREA
GROUNDWATER FLOW MAP**

(APRIL 2002)

FIVE-YEAR REVIEW REPORT
NATIONAL PRESTO INDUSTRIES, INC.
EAU CLAIRE, WISCONSIN



EAST DISPOSAL SITE
GROUNDWATER FLOW MAP
(APRIL 2002)
FIVE-YEAR REVIEW REPORT
NATIONAL PRESTO INDUSTRIES, INC.
EAU CLAIRE, WISCONSIN

LEGEND

- Groundwater Contour
With Flow Direction
(Dashed Where Inferred)
- Groundwater Elevation
(NM=Not Measured)
- Nested Well Identification
(Well Measured Is Underlined)
- WN-17AC
(Well Measured Is Underlined)
- NPI Superfund Monitoring
Well Nest (NM Prefix)
- NPI Monitoring Well
(NM Prefix)
- NDNR Monitoring Well
Nest (NM Prefix)
- NPI Superfund Extraction
Well (EW Prefix)

**NATIONAL PRESTO INDUSTRIES
AND EAU CLAIRE MUNICIPAL WELL FIELD
CONSOLIDATED
FIVE YEAR REVIEW
TABLES**

NATIONAL PRESTO INDUSTRIES AND ECMWF SITES
EAU CLAIRE, WISCONSIN

TABLE I

APPROXIMATE ANNUAL REMEDIAL COSTS

Year	Operable Unit #1	Operable Unit #2	ECMWF	Annual Total
1997	\$ 67,507	Not Installed	\$ 62,056	\$ 129,563
1998	\$ 86,265	\$ 3,259	\$ 53,095	\$ 142,619
1999	\$ 113,626	\$ 22,955	\$ 58,138	\$ 194,719
2000	\$ 88,837	\$ 57,717	\$ 61,619	\$ 208,173
2001	\$ 100,154	\$ 34,308	\$ 65,664	\$ 200,126
2002	\$ 39,152	\$ 13,027	\$ 46,715	\$ 98,894

NOTES:

Costs do not include mowing of the cap and NPI employee payroll costs for time spent sampling etc.

Operable Unit #1 includes all activities other than the MRDS and ECMWF.

Operable Unit #2 is the MRDS.

2002 costs are for first six months.

NATIONAL PRESTO INDUSTRIES
EAU CLAIRE, WISCONSIN

TABLE 2

TCE CONCENTRATIONS (µg/l) IN CITY OF EAU CLAIRE PRODUCTION WELLS
AND IN RAW WATER TO AIR STRIPPER

Date	PW-11	PW-15	PW-16	PW-17	PW-19 (1)	Raw Water (2)
1997						
06/05/97	<0.2	0.7	<0.2	<0.2	2.6	1.1
07/28/97	0.3	1.1	<0.2	<0.2	4.6	0.9
08/05/97	0.7	2.1	<0.2	0.2	8.9*	2.2
09/08/97	0.5	1.0	<0.2	<0.2	4.3	1.7
10/09/97	0.3	0.6	<0.2	0.2	4.4	0.9
11/03/97	<0.2	0.5	<0.2	<0.2	4.3	0.6
12/11/97	0.4	NS	NS	0.2	4.0	1.0
AVERAGE	0.29	1.05	0.10	0.10	4.48	1.33
1998						
01/28/98	<0.2	NS	NS	<0.2	2.6	1.4
02/03/98	0.3	NS	NS	<0.2	2.9	1.0
03/26/98	0.3	NS	NS	NS	2.1	1.4
04/14/98	<0.2	0.6	<0.2	<0.2	3.8	0.6
05/01/98	1.6	2.9	NS	<0.2	7.4	4.0
06/01/98	0.7	2.3	<0.2	<0.2	4.3	2.8
07/02/98	0.3	0.8	<0.2	<0.2	2.1	0.6
08/11/98	0.7	2.3	NS	0.3	3.6	2.9
09/01/98	<0.6	0.7	<0.6	<0.6	4.4	<0.6
10/19/98	<0.6	1.2	<0.6	<0.6	3.7	1.5
11/06/98	<0.6	0.7	<0.6	<0.6	3.3	1.3
12/02/98	<0.6	0.7	<0.6	<0.6	4.0	0.9
AVERAGE	0.44	1.36	0.21	0.19	4.02	1.56
1999						
01/04/99	<0.6	0.5	<0.6	<0.6	2.9	0.8
02/09/99	<0.6	<0.6	<0.6	<0.6	3.6	<0.6
03/04/99	<0.6	1.2	<0.6	<0.6	4.5	1.5
04/08/99	0.9	1.6	<0.6	<0.6	4.8	0.7
05/20/99	<0.6	0.9	NS	NS	4.3	1.0
06/08/99	0.9	1.3	<0.6	<0.6	4.5	1.5
07/21/99	0.8	1.1	NS	0.7	3.6	1.3
08/13/99	<0.6	1.0	<0.6	<0.6	3.5	1.0
09/13/99	<0.6	0.7	<0.6	<0.6	3.3	0.8
10/20/99	<0.6	0.7	<0.6	<0.6	3.1	0.9
11/10/99	<0.6	0.8	<0.6	<0.6	3.9	0.9
12/06/99	<0.6	1.3	<0.6	<0.6	NS	<0.6
AVERAGE	0.44	0.95	0.30	0.34	3.82	0.92

Table 2 Continued

Date	PW-11	PW-15	PW-16	PW-17	PW-19 (1)	Raw Water (2)
2000						
01/03/00	0.6	1.7	<0.6	<0.6	NS	0.6
02/03/00	<0.6	1.4	<0.6	<0.6	3.5	1.1
03/29/00	<0.6	0.6	NS	<0.6	3.5	1.4
04/03/00	<0.6	1.2	NS	<0.6	4.4	0.6
05/02/00	<0.6	<0.6	<0.6	<0.6	3.2	1.2
06/01/00	<0.6	0.6	<0.6	<0.6	3.3	0.6
07/03/00	<0.6	<0.6	<0.6	<0.6	2.5	0.6
08/04/00	<0.6	<0.6	<0.6	<0.6	2.9	0.6
09/06/00	<0.6	<0.6	<0.6	<0.6	3.2	0.6
10/04/00	<0.6	<0.6	<0.6	<0.6	1.7	0.6
11/01/00	<0.6	<0.6	<0.6	<0.6	2.7	0.6
12/01/00	<0.6	0.6	<0.6	0.6	1.3	0.9
AVERAGE	0.32	0.58	0.30	0.30	2.93	0.58
2001						
01/04/01	<0.6	<0.6	<0.6	<0.6	1.3	0.6
02/07/01	<0.6	<0.6	<0.6	<0.6	3.0	0.6
03/07/01	<0.6	<0.6	<0.6	<0.6	2.8	0.8
04/03/01	Out of service	<0.6	<0.6	<0.6	6.8 (3)	<0.6
05/09/01	<0.6	<0.6	Out of service	<0.6	1.2	<0.6
06/01/01	<0.6	<0.6	<0.6	<0.6	1.8	<0.6
07/18/01	<0.6	<0.6	<0.6	<0.6	3.3	<0.6
08/01/01	<0.6	<0.6	<0.6	<0.6	2.4	1.1
09/12/01	<0.6	<0.6	<0.6	<0.6	2.3	<0.6
10/17/01	(5)	(5)	(5)	(5)	(5)	(5)
11/07/01	<0.3	<0.3	<0.3	<0.3	1.6	0.7
12/04/01	<0.3	<0.3	<0.3	<0.3	0.5	<0.3
AVERAGE	0.26	0.26	0.26	0.27	2.30	0.43
2002						
01/03/02	<1.2	<1.2	<1.2	<1.2	2.7	<1.2
02/25/02	<1.2	<1.2	<1.2	<1.2	1.5	<1.2
03/01/02	<1.2	<1.2	<1.2	<1.2	2.4	<1.2
04/22/02	<1.2	<1.2	<1.2	<1.2	3.1	<1.2
05/08/02	<1.2	<1.2	<1.2	<1.2	2.1	<1.2
06/10/02	<1.2	<1.2	<1.2	<1.2	1.3	<1.2
AVERAGE	<1.2	<1.2	<1.2	<1.2	2.18	<1.2

NOTES:

DNA = Data not available to Gannett Fleming; does not mean that City of Eau Claire did not collect samples.

NI = Not installed.

NS = Not sampled.

These analytical results were provided by the City of Eau Claire water department.

Samples were analyzed by the city using EPA Method 8260.

QA/QC testing is done quarterly, as these results are for internal use only.

The wells shown in this table are the only city production wells affected by TCE.

Values shaded exceed the MCL/ES of 5.0 µg/l.

* Analytical result is outside historical range.

Values less than the detection limit were considered as one-half the detection limit for purposes of averaging.

FOOTNOTES:

(1) PW-19 installed in September 1993.

(2) Commingled untreated water pumped from production wells PW-11, 15, 16, 17, and 19.

Air stripper began operating in August 1987.

(3) Suspect analytical error based on mass balance calculations using measured pumping rate of each individual well on sample date.

(4) Samples collected by Gannett Fleming.

(5) Lab error, results not recorded

NATIONAL PRESTO INDUSTRIES, INC.
EAU CLAIRE, WISCONSIN

TABLE 3

CITY OF EAU CLAIRE WATER SUPPLY SYSTEM SAMPLING
SAMPLES COLLECTED MARCH 7, 2001, AND RESULTS IN UNITS OF ug/l

Parameter	City Well-10		City Well-15		City Well-16		City Well-17		City Well-19		Federal	NR 140	NR 140
	City	GF	City	GF	City	GF	City	GF	City	GF	MCL	ES	PAL
TCE	<0.6	<0.10	<0.6	0.441	<0.6	<0.10	<0.6	<0.10	2.8	3.30	5.0	5.0	0.50
1,1,1-TCA	<0.6	<0.15	<0.6	<0.15	<0.6	<0.15	<0.6	<0.15	1.9	2.21	200	200	40
1,1-DCA	<1.0	<0.15	<1.0	<0.15	<1.0	<0.15	<1.0	<0.15	<1.0	0.9	No MCL	850	85
PCE	<0.7	<0.15	<0.7	<0.15	<0.7	<0.15	<0.7	<0.15	<0.7	<0.15	5.0	5.0	0.50

Parameter	Commingleed Untreated Raw Water (1)		Tower A - Treated Water (2)		Tower B - Treated Water (3)		Commingleed Treated Water after Chlorination (4)		Trip Blank		Federal	NR 140	NR 140
	City	GF	City	GF	City	GF	City	GF	City	GF	MCL	ES	PAL
TCE	0.8	1.06	<0.6	<0.10	<0.6	<0.10	<0.6	<0.10	NA	<0.10	5.0	5.0	0.50
1,1,1-TCA	0.6	0.659	<0.6	<0.15	<0.6	<0.15	<0.6	<0.15	NA	<0.15	200	200	40
1,1-DCA	<1.0	0.225 J	<1.0	<0.15	<1.0	<0.15	<1.0	<0.15	NA	<0.15	No MCL	850	85
PCE	<0.7	<0.15	<0.7	<0.15	<0.7	<0.15	<0.7	<0.15	NA	<0.15	5.0	5.0	0.50

NOTES:

Samples collected by C. Barden of (Jannett Fleming (GF) and Kathy White of City of Eau Claire Water Department.

GF samples analyzed by U.S. Filter using EPA Method 524.2 (Safe Drinking Water Act required method), and city samples analyzed in-house using EPA Method 8260.

Results exceeding an NR 140 PAL are shown in bold.

J = Estimated concentration below laboratory quantitation level.

MCL (maximum contaminant level) is the federal established maximum permissible level of a contaminant in water that is delivered to any user of a public water system.

NR 140 ESs established by the Wisconsin Department of Health and Family Services and set at a risk level equal to a ratio of one to one million. The expectation of a one to one million risk level is that no more than one excess death will occur in a population of one million over a 70-year period for a person weighing 10 kilograms intaking one liter of drinking water per day.

Level is that no more than one excess death will occur in a population of one million over a 70-year period for a person weighing 10 kilograms intaking one liter of drinking water per day.

FOOTNOTES:

- (1) Sample collected from spigot on line supplying well water (NW-10, 15, 16, 17, and 19) to air strippers A and B.
- (2) Sample collected from spigot on Tower A discharge line.
- (3) Sample collected from spigot on Tower B discharge line.
- (4) Sample collected from drinking fountain in water treatment building (distribution system samples).

Table 3 Continued . . .

SAMPLES COLLECTED MAY 9, 2001, AND RESULTS IN UNITS OF ug/l

Parameter	City Well-11		City Well-15		City Well-16		City Well-17		City Well-19		Federal MCL	NR 140 ES	NR 140 PAL
	City	GF	City	GF	City	GF	City	GF	City	GF			
TCE	<0.6	<0.10	<0.6	0.434	Not in service		<0.6	<0.10	1.2	3.37	5.0	5.0	0.50
1,1,1-TCA	<0.6	<0.15	<0.6	0.189			<0.6	<0.15	1.0	2.31	200	200	40
1,1-DCA	<1.0	<0.15	<1.0	<0.15			<1.0	<0.15	<1.0	0.877	No MCL	850	85
PCE	<0.7	<0.15	<0.7	<0.15			<0.7	<0.15	<0.7	<0.15	5.0	5.0	0.50

Parameter	Commingled Untreated Raw Water (1)		Tower A - Treated Water (2)		Tower B - Treated Water (3)		Commingled Treated Water after Chlorination (4)		Trip Blank		Federal MCL	NR 140 ES	NR 140 PAL
	City	GF	City	GF	City	GF	City	GF	City	GF			
TCE	<0.6	1.04	<0.6	<0.10	<0.6	<0.10	<0.6	<0.10	NA	<0.10	5.0	5.0	0.50
1,1,1-TCA	<0.6	0.761	<0.6	<0.15	<0.6	<0.15	<0.6	<0.15	NA	<0.15	200	200	40
1,1-DCA	<1.0	0.265 J	<1.0	<0.15	<1.0	<0.15	<1.0	<0.15	NA	<0.15	No MCL	850	85
PCE	<0.7	<0.15	<0.7	<0.15	<0.7	<0.15	<0.7	0.232 J	NA	<0.15	5.0	5.0	0.50

NOTES:

Samples collected by C. Barden of Gannett Fleming (GF) and Kathy White of City of Eau Claire Water Department.

GF samples analyzed by U.S. Filter using EPA Method 524.2 (Safe Drinking Water Act required method), and city samples analyzed in-house using EPA Method 8260.

Results exceeding an NR 140 PAL are shown in bold.

MCL (maximum contaminant level) is the federal established maximum permissible level of a contaminant in water that is delivered to any user of a public water system.

NR 140 ESs established by the Wisconsin Department of Health and Family Services and set at a risk level equal to a ratio of one to one million. The expectation of a one to one million risk level is that no more than one excess death will occur in a population of one million over a 70-year period for a person weighing 10 kilograms inaking one liter of drinking water per day.

FOOTNOTES:

- (1) Sample collected from spigot on line supplying well water (CW-11, 15, 17, and 19) to air strippers A and B.
- (2) Sampled collected from spigot on Tower A discharge line.
- (3) Sampled collected from spigot on Tower B discharge line.
- (4) Sample collected from drinking fountain in water treatment building (distribution system samples).

Table 3 Continued

SAMPLES COLLECTED JULY 18, 2001, AND RESULTS IN UNITS OF ug/l

Parameter	City Well-11		City Well-15		City Well-16		City Well-17		City Well-19		Federal MCL	NR 140	
	City	GF	City	GF	City	GF	City	GF	City	GF		ES	PAL
ICE	<0.6	NA	<0.6	0.477	<0.6	<0.1	<0.6	<0.1	3.3	3.06	5.0	5.0	0.50
1,1,1-TCA	<0.6	NA	<0.6	0.168 J	<0.6	<0.15	<0.6	<0.15	<0.6	2.31	200	200	40
1,1-DCA	<1.0	NA	<1.0	<0.15	<1.0	<0.15	<1.0	<0.15	<1.0	0.843	No MCL	850	85
PCE	<0.7	NA	<0.7	<0.15	<0.7	<0.15	<0.7	<0.15	<0.7	<0.15	5.0	5.0	0.50

Parameter	Commingled Untreated Raw Water (1)		Tower A - Treated Water (2)		Tower B - Treated Water (3)		Commingled Treated Water after Chlorination (4)		Trip Blank		Federal MCL	NR 140	
	City	GF	City	GF	City	GF	City	GF	City	GF		ES	PAL
ICE	<0.6	0.848	<0.6	0.103	<0.6	<0.1	<0.6	<0.1	NA	NA	5.0	5.0	0.50
1,1,1-TCA	<0.6	0.574	<0.6	<0.15	<0.6	<0.15	<0.6	<0.15	NA	NA	200	200	40
1,1-DCA	<1.0	0.183	<1.0	<0.15	<1.0	<0.15	<1.0	<0.15	NA	NA	No MCL	850	85
PCE	<0.7	<0.15	<0.7	<0.15	<0.7	<0.15	<0.7	<0.15	NA	NA	5.0	5.0	0.50

NOTES:

Samples collected by L. Cecil of Gannett Fleming (GF) and Kathy White of City of Eau Claire Water Department.

GF samples analyzed by U.S. Filter using EPA Method 524.2 (Safe Drinking Water Act required method), and city samples analyzed in-house using EPA Method 8260.

Results exceeding an NR 140 PAL are shown in bold.

MCL (maximum contaminant level) is the federal established maximum permissible level of a contaminant in water that is delivered to any user of a public water system.

NR 140 ESs established by the Wisconsin Department of Health and Family Services and set at a risk level equal to a ratio of one to one million. The expectation of a one to one million risk level is that no more than one excess death will occur in a population of one million over a 70-year period for a person weighing 10 kilograms intaking one liter of drinking water per day.

NA = Not analyzed.

FOOTNOTES:

- (1) Sample collected from spigot on line supplying well water (CW-11, 15, 16, 17, and 19) to air strippers A and B.
- (2) Sampled collected from spigot on Tower A discharge line.
- (3) Sampled collected from spigot on Tower B discharge line.
- (4) Sample collected from drinking fountain in water treatment building (distribution system samples).

Table 3 Continued

SAMPLES COLLECTED OCTOBER 17, 2001, AND RESULTS IN UNITS OF ug/l

Parameter	City Well-10		City Well-11		City Well-15		City Well-16		City Well-17		Federal MCL	NR 140 ES	NR 140 PAL
	City	GF	City	GF	City	GF	City	GF	City	GF			
ICE	(5)	<0.1	(5)	<0.1	(5)	0.333	(5)	<0.1	(5)	<0.1	5.0	5.0	0.50
I,1,1-TCA	<0.7	<0.15 D	<0.7	<0.15	<0.7	0.15 J	<0.7	<0.15	<0.7	<0.15	200	200	40
I,1-DCA	<0.2	<0.15	<0.2	<0.15	<0.2	0.367 J	<0.2	<0.15	<0.2	<0.15	No MCL	850	85
PCE	<0.6	<0.15	<0.6	<0.15	<0.6	<0.15	<0.6	<0.15	<0.6	<0.15	5.0	5.0	0.50

Parameter	City Well-19		Commingled Untreated Raw Water (1)		Tower A - Treated Water (2)		Tower B - Treated Water (3)		Commingled Treated Water after Chlorination (4)		Federal MCL	NR 140 ES	NR 140 PAL
	City	GF	City	GF	City	GF	City	GF	City	GF			
ICE	(5)	2.59	(5)	0.721	(5)	<0.1	(5)	<0.1	(5)	<0.1	5.0	5.0	0.50
I,1,1-TCA	1.0	1.74 D	<0.7	0.434 J	<0.7	<0.15 D	<0.7	<0.15 D	<0.7	<0.15	200	200	40
I,1-DCA	<0.2	0.682	<0.2	<0.15	<0.2	<0.15	<0.2	<0.15	<0.2	<0.15	No MCL	850	85
PCE	<0.6	<0.15	<0.6	<0.15	<0.6	<0.15	<0.6	<0.15	<0.6	<0.15	5.0	5.0	0.50

NOTES:

Samples collected by L. Cecil of Ganett Fleming (GF) and Kathy White of City of Eau Claire Water Department.

GF samples analyzed by U.S. Filter using EPA Method 524.2 (Safe Drinking Water Act required method), and city samples analyzed in-house using EPA Method 8260.

Results exceeding an NR 140 PAL are shown in bold.

D = Result of duplicate analysis in this quality assurance batch exceeds the limits for precision.

MCL (maximum contaminant level) is the federal established maximum permissible level of a contaminant in water that is delivered to any user of a public water system.

NR 140 ESs established by the Wisconsin Department of Health and Family Services and set at a risk level equal to a ratio of one to one million. The expectation of a one to one million : 1 level is that no more than one excess death will occur in a population of one million over a 70-year period for a person weighing 10 kilograms intaking one liter of drinking water per day.

FOOTNOTES:

- (1) Sample collected from spigot on line supplying well water (CW-11, 15, 16, 17, and 19) to air strippers A and B.
- (2) Sampled collected from spigot on Tower A discharge line.
- (3) Sampled collected from spigot on Tower B discharge line.
- (4) Sample collected from drinking fountain in water treatment building (distribution system samples).
- (5) Lab error, results not recorded.

Table 3 Continued

SAMPLES COLLECTED APRIL 22, 2002, AND RESULTS IN UNITS OF ug/l

Parameter	City Well-10		City Well-11		City Well-15		City Well-16		City Well-17		Federal MCL	NR 140 ES	NR 140 PAL
	City	GF	City	GF	City	GF	City	GF	City	GF			
TCE	<1.2	<0.1	<1.2	<0.1	<1.2	0.308	<1.2	<0.1	<1.2	<0.1	5.0	5.0	0.50
1,1,1-TCA	<0.7	<0.15	<0.7	<0.15	<0.7	<0.15	<0.7	<0.15	<0.7	<0.15	200	200	40
1,1-DCA	<1.4	<0.15	<1.4	<0.15	<1.4	<0.15	<1.4	<0.15	<1.4	<0.15	No MCL	850	85
PCE	<1.4	<0.15	<1.4	<0.15	<1.4	<0.15	<1.4	<0.15	<1.4	<0.15	5.0	5.0	0.50

Parameter	City Well-19		Commingle Untreated Raw Water (1)		Tower A - Treated Water (2)		Tower B - Treated Water (3)		Commingle Treated Water after Chlorination (4)		Federal MCL	NR 140 ES	NR 140 PAL
	City	GF	City	GF	City	GF	City	GF	City	GF			
TCE	3.1	3.59	<1.2	1.09	<1.2	<0.1	<1.2	<0.1	<1.2	<0.1	5.0	5.0	0.50
1,1,1-TCA	3.6	2.00	1.9	0.603	<0.7	<0.15	<0.7	<0.15	<0.7	<0.15	200	200	40
1,1-DCA	2.1	0.971	<1.4	0.243	<1.4	<0.15	<1.4	<0.15	<1.4	<0.15	No MCL	850	85
PCE	<1.4	<0.15	<1.4	<0.15	<1.4	<0.15	<1.4	<0.15	<1.4	<0.15	5.0	5.0	0.50

NOTES:

Samples collected by L. Cecil of Gannett Fleming (GF) and Kathy White of City of Eau Claire Water Department.

GF samples analyzed by U.S. Filter using EPA Method 524.2 (Safe Drinking Water Act required method), and city samples analyzed in-house using EPA Method 8260.

Results exceeding an NR 140 PAL are shown in bold.

D = Result of duplicate analysis in this quality assurance batch exceeds the limits for precision.

MCL (maximum contaminant level) is the federal established maximum permissible level of a contaminant in water that is delivered to any user of a public water system.

NR 140 ESs established by the Wisconsin Department of Health and Family Services and set at a risk level equal to a ratio of one to one million. The expectation of a one to one million risk level is that no more than one excess death will occur in a population of one million over a 70-year period for a person weighing 10 kilograms ingesting one liter of drinking water per day.

FOOTNOTES:

- (1) Sample collected from spigot on line supplying well water (CW-11, 15, 16, 17, and 19) to air strippers A and B.
- (2) Sample collected from spigot on Tower A discharge line.
- (3) Sample collected from spigot on Tower B discharge line.
- (4) Sample collected from drinking fountain in water treatment building (distribution system samples).

NATIONAL PRESTO INDUSTRIES, INC.
EAU CLAIRE, WISCONSIN

TABLE 5

WATER LEVEL MEASUREMENTS

Well ID	Measuring Point Elevation (MSL)	07/21/97 - 07/22/97	
		• Depth to Water (ft)	Water Level Elevation (MSL)
	Melby Road Disposal Area		
MW-5A	897.56	74.76	822.80
MW-6	904.70	82.26	822.44
MW-9A	905.30	82.54	822.76
MW-62A	893.69	71.12	822.57
MW-63A	899.05	76.40	822.65
MW-64A	894.89	72.23	822.66
MW-65A	891.68	69.08	822.60
MW-66A	900.53	78.11	822.42
EW-2	898.58	NM	NM
	Southwest Corner		
MW-4A	897.25	75.38	821.87
MW-10A	894.84	68.15	826.69
MW-11A	896.76	72.12	824.64
MW-23A	895.99	74.12	821.87
MW-34A	895.36	72.46	822.90
MW-39A	896.17	74.30	821.87
MW-67A	895.96	74.34	821.62
MW-68A	896.47	74.12	822.35
MW-69A	898.02	76.26	821.76
MW-70A	895.68	73.54	822.14
MW-71A	894.70	71.32	823.38
EW-3	897.22	NM	NM
EW-4	898.23	NM	NM

NOTE:

NM = Not measured.

Table 5 Continued . . .

Well ID	Measuring Point Elevation (MSL)	10/21/97 - 10/23/97		01/27/98 - 01/28/98		04/20/98 - 04/23/98		07/20/98 - 07/21/98		10/26/98 - 10/28/98	
		Depth to Water (ft)	Water Level Elevation (MSL)	Depth to Water (ft)	Water Level Elevation (MSL)	Depth to Water (ft)	Water Level Elevation (MSL)	Depth to Water (ft)	Water Level Elevation (MSL)	Depth to Water (ft)	Water Level Elevation (MSL)
Melby Road Disposal Area											
MW-5A	897.56	74.24	823.32	74.40	823.16	74.40	823.16	72.89	824.67	78.10	819.46
MW-6	904.70	81.72	822.98	81.96	822.74	81.77	822.93	80.50	824.10	81.46	823.24
MW-7	897.73	NM	NM	NM	NM	NM	NM	NM	NM	71.11	826.02
MW-8	904.24	NM	NM	NM	NM	NM	NM	NM	NM	80.07	824.17
MW-9A	905.30	82.06	823.24	82.28	823.02	82.31	822.99	80.76	824.54	81.65	823.65
MW-13A	896.86	72.39	824.47	72.65	824.21	72.54	824.32	71.27	825.59	71.94	824.92
MW-18	898.38	NM	NM	NM	NM	NM	NM	NM	NM	64.48	833.90
MW-19	898.89	NM	NM	NM	NM	NM	NM	NM	NM	60.17	838.72
MW-22A	900.79	78.16	822.63	NM	NM	78.24	822.55	77.17	823.62	77.76	823.03
MW-30A	898.59	NM	NM	NM	NM	NM	NM	NM	NM	73.32	825.27
MW-62A	893.69	70.64	823.05	70.82	822.87	70.85	822.84	69.51	824.18	NM	NM
MW-63A	899.05	75.90	823.15	76.04	823.01	76.04	823.01	74.50	824.55	78.70	820.35
MW-64A	894.89	71.72	823.17	70.94	823.95	71.96	822.93	70.65	824.24	71.30	823.59
MW-65A	891.68	68.56	823.12	68.79	822.89	68.83	822.85	67.53	824.15	68.14	823.54
MW-66A	900.53	77.63	822.90	77.78	822.75	77.70	822.83	76.52	824.01	77.14	823.39
East Disposal Site											
MW-72	899.26	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	42.58	856.68
MW-73	899.71	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	39.96	859.75
Southwest Corner											
MW-4A	897.25	74.83	822.42	75.04	822.21	75.00	822.25	73.98	823.27	74.40	822.85
MW-10A	894.84	67.86	826.98	68.12	826.72	67.85	826.99	67.25	827.59	67.60	827.24
MW-11A	896.76	71.71	825.05	72.04	824.72	71.63	825.13	70.61	826.15	71.12	825.64
MW-23A	895.99	73.60	822.39	73.78	822.21	73.76	822.23	72.82	823.17	73.16	822.83
MW-34A	895.36	71.92	823.44	72.17	823.19	72.12	823.24	71.20	824.16	71.54	823.82
MW-39A	896.17	73.76	822.41	73.96	822.21	73.98	822.19	72.94	823.23	73.36	822.81
MW-67A	895.96	73.76	822.20	74.04	821.92	73.92	822.04	72.98	822.98	73.38	822.58
MW-68A	896.47	74.08	822.39	74.28	822.19	74.25	822.22	73.66	822.81	73.66	822.81
MW-69A	898.02	75.71	822.31	75.89	822.13	75.84	822.18	74.90	823.12	75.28	822.74
MW-70A	895.68	72.96	822.72	73.17	822.51	73.10	822.58	72.22	823.46	72.58	823.10
MW-71A	894.70	70.79	823.91	70.98	823.72	71.02	823.68	70.00	824.70	70.40	824.30

NOTE

NM = Not measured.

FOOTNOTE

(1) Well installed September 9, 1998

Table 5 Continued

Well ID	Measuring Point Elevation (MSL)	01/18/99 - 01/20/99		04/12/99 - 04/20/99		7/26/99-7/28/99		10/05/99-10/08/99	
		Depth to Water (ft)	Water Level Elevation (MSL)	Depth to Water (ft)	Water Level Elevation (MSL)	Depth to Water (ft)	Water Level Elevation (MSL)	Depth to Water (ft)	Water Level Elevation (MSL)
Melby Road Disposal Area									
EW-1R	896.00	NM	NM	NM	NM	NM	NM	Inaccessible	Inaccessible
EW-2	895.81	NM	NM	NM	NM	NM	NM	Inaccessible	Inaccessible
MW-5A	897.56	79.95	817.61	80.52	817.04	80.50	817.06	80.37	817.19
MW-5B	897.02	79.74	817.28	80.34	816.68	80.34	816.68	80.18	816.84
MW-6	904.70	81.98	822.72	82.49	822.21	82.49	822.21	82.33	822.37
MW-7	897.73	NM	NM	71.41	826.32	71.28	826.45	71.19	826.54
MW-8	904.24	80.90	823.34	81.50	822.74	NM	NM	81.33	822.91
MW-9A	905.30	82.29	823.01	82.80	822.50	82.82	822.48	82.65	822.65
MW-9B	905.30	82.50	822.80	83.00	822.30	83.05	822.25	82.86	822.44
MW-12A	897.09	NM	NM	NM	NM	NM	NM	72.56	824.53
MW-13A	896.86	72.67	824.19	73.44	823.42	73.35	823.51	73.22	823.64
MW-13B	896.81	NM	NM	73.37	823.44	73.30	823.51	NM	NM
MW-18	898.38	NM	NM	NM	NM	NM	NM	Well Damaged	Well Damaged
MW-30A	898.59	74.01	824.58	74.75	823.84	NM	NM	NM	NM
MW-62A	893.69	79.06	814.63	79.70	813.99	NM	NM	79.53	814.16
MW-63A	899.05	79.86	819.19	80.42	818.63	NM	NM	80.26	818.79
MW-64A	894.89	NM	NM	72.69	822.20	NM	NM	72.52	822.37
MW-64B	895.24	NM	NM	73.01	822.23	NM	NM	72.84	822.40
MW-64C	894.75	NM	NM	73.53	821.22	NM	NM	72.35	822.40
MW-65A	891.68	68.81	822.87	69.52	822.16	69.53	822.15	69.38	822.30
MW-65B	891.62	NM	NM	69.45	822.17	69.46	822.16	NM	NM
MW-65C	891.77	NM	NM	69.62	822.15	69.60	822.17	NM	NM
MW-66A	900.53	77.80	822.73	78.42	822.11	78.42	822.11	78.27	822.26
MW-66B	900.26	NM	NM	78.13	822.13	78.12	822.14	77.98	822.28
MW-66C	900.43	NM	NM	78.30	822.13	78.32	822.11	NM	NM
East Disposal Site									
MW-17B	899.12	NM	NM	44.14	854.98	NM	NM	43.71	855.41
MW-17C	899.50	NM	NM	45.45	854.05	NM	NM	45.05	854.45
MW-19	898.89	60.76	838.13	61.38	837.51	NM	NM	61.02	837.87
MW-7	899.26	43.46	855.80	44.18	855.08	43.17	856.09	43.67	855.59
MW-73	899.71	41.04	858.67	42.24	857.47	38.92	860.79	40.62	859.09
WW-11	901.36	NM	NM	NM	NM	NM	NM	47.66	853.70
Southwest Corner									
EW-3	897.22	NM	NM	80.52	816.70	80.87	816.35	80.23	816.99
EW-4	898.23	NM	NM	79.49	818.74	79.38	818.85	79.24	818.99
MW-4A	897.25	75.06	822.19	75.70	821.55	75.72	821.53	75.58	821.67
MW-4B	896.65	NM	NM	75.15	821.50	75.17	821.48	75.03	821.62
MW-10A	894.84	68.16	826.68	68.60	826.24	68.27	826.57	68.39	826.45
MW-10B	894.91	NM	NM	69.98	824.93	69.83	825.08	69.81	825.10
MW-11A	896.76	71.78	824.98	72.38	824.38	NM	NM	72.24	824.52
MW-11B	896.27	NM	NM	72.34	823.93	NM	NM	72.20	824.07
MW-21A	899.27	NM	NM	NM	NM	NM	NM	77.27	822.00
MW-22A	900.79	78.34	822.45	79.06	821.73	79.00	821.79	NM	NM
MW-22B	900.71	NM	NM	79.14	821.57	79.06	821.65	NM	NM
MW-23A	895.99	73.80	822.19	74.50	821.49	74.52	821.47	74.39	821.60
MW-23B	895.95	NM	NM	74.20	821.75	74.22	821.73	74.09	821.86
MW-33A	885.30	NM	NM	63.60	821.70	NM	NM	63.36	821.94
MW-33B	885.25	NM	NM	63.52	821.73	NM	NM	63.28	821.97
MW-34A	895.36	72.18	823.18	72.84	822.52	72.82	822.54	72.68	822.68

Table 5 Continued . . .

Well ID	Measuring Point Elevation (MSL)	01/18/99 - 01/20/99		04/12/99 - 04/20/99		7/26/99-7/28/99		10/05/99-10/08/99	
		Depth to Water (ft)	Water Level Elevation (MSL)	Depth to Water (ft)	Water Level Elevation (MSL)	Depth to Water (ft)	Water Level Elevation (MSL)	Depth to Water (ft)	Water Level Elevation (MSL)
MW-34B	895.28	NM	NM	72.78	822.50	72.80	822.48	72.64	822.64
MW-34C	895.25		0.00		0.00		0.00		0.00
MW-39A	896.17	74.00	822.17	74.68	821.49	74.72	821.45	74.59	821.58
MW-39B	896.38	NM	NM	74.95	821.47	74.98	821.40	NM	NM
MW-67A	895.96	74.02	821.94	74.66	821.30	.66	821.30	74.52	821.44
MW-67B	895.79	NM	NM	74.44	821.35	74.44	821.35	74.30	821.49
MW-68A	896.47	74.31	822.16	74.98	821.49	75.00	821.47	74.86	821.61
MW-68B	896.77	NM	NM	75.28	821.49	75.30	821.47	75.17	821.60
MW-69A	898.02	75.92	822.10	76.58	821.44	76.60	821.42	76.47	821.55
MW-69B	898.23	NM	NM	76.78	821.45	76.82	821.41	76.68	821.55
MW-70A	895.68	73.40	822.28	73.92	821.76	73.92	821.76	73.76	821.92
MW-70B	895.57	NM	NM	73.79	821.78	73.78	821.79	73.63	821.94
MW-71A	894.70	71.02	823.68	71.73	822.97	71.78	822.92	71.64	823.06
MW-71B	894.89	NM	NM	72.26	822.63	72.30	822.59	NM	NM
PW-1	898.28	NM	NM	NM	NM	74.90	823.38	74.81	823.47
PW-2	894.71	NM	NM	NM	NM	72.48	822.23	72.35	822.36
PW-3R	896.21	NM	NM	NM	NM	71.81	824.40	74.40	821.81
PW-4	895.59	NM	NM	NM	NM	73.06	822.53	73.56	822.03
W-7	899.00	NM	NM	NM	NM	NM	NM	77.46	821.54
Eau Claire County Airport Area									
MW-40A	886.57	NM	NM	66.70	819.87	NM	NM	NM	NM
MW-41A	884.04	NM	NM	64.16	819.88	NM	NM	64.02	820.02
MW-41B	883.84	NM	NM	64.55	819.29	NM	NM	63.80	820.04
MW-43A	885.34	NM	NM	65.63	819.71	NM	NM	65.50	819.84
MW-43B	885.35	NM	NM	65.64	819.71	NM	NM	65.50	819.85
MW-45A	886.20	NM	NM	71.38	814.82	NM	NM	71.35	814.85
MW-45B	886.26	NM	NM	71.42	814.84	NM	NM	71.38	814.88
MW-45C	886.05	NM	NM	71.20	814.85	NM	NM	71.17	814.88
MW-53A	887.93	NM	NM	83.34	804.59	NM	NM	83.78	804.15
MW-53B	888.25	NM	NM	83.54	804.71	NM	NM	83.98	804.27
RW-3A	881.78	NM	NM	87.38	794.40	NM	NM	88.28	793.50
RW-3B	881.48	NM	NM	87.00	794.48	NM	NM	87.92	793.56
RW-3C	881.30	NM	NM	86.86	794.44	NM	NM	87.74	793.56
Lake Hallie Area									
MW-29A	892.72	NM	NM	75.82	816.90	NM	NM	75.66	817.06
MW-29B	892.49	NM	NM	75.61	816.88	NM	NM	75.45	817.04
Miscellaneous Wells									
MW-27A	890.20	NM	NM	NM	NM	NM	NM	69.61	820.59
MW-27B	890.15	NM	NM	69.90	820.25	NM	NM	69.55	820.60
RW-16	888.87	NM	NM	70.75	818.12	NM	NM	70.66	818.21
RW-16B	889.66	NM	NM	71.52	818.14	NM	NM	71.44	818.22
RW-16C	890.01	NM	NM	71.88	818.13	NM	NM	71.80	818.21
City Well Field									
EC-1	813.95	NM	NM	24.20	789.75	NM	NM	25.08	788.87
EC-2	814.44	NM	NM	24.98	789.46	NM	NM	25.82	788.62
EC-6	813.19	NM	NM	23.77	789.42	NM	NM	24.66	788.53

NOTE:

NM = Not measured.

Table 5 Continued . . .

Well ID	Measuring Point Elevation (MSL)	01/31/00		5/22/00		7/17/00		10/9/00	
		Depth to Water (ft)	Water Level Elevation (MSL)	Depth to Water (ft)	Water Level Elevation (MSL)	Depth to Water (ft)	Water Level Elevation (MSL)	Depth to Water (ft)	Water Level Elevation (MSL)
Melby Road Disposal Area									
EW-1R	896.00	NM	NM	NM	NM	81.69	814.31	NM	NM
EW-2	895.81	NM	NM	NM	NM	95.11	800.70	NM	NM
MW-5A	897.56	81.01	816.55	81.76	815.80	81.44	816.12	80.14	817.42
MW-5B	897.02	80.83	816.19	81.57	815.45	81.26	815.76	79.96	817.06
MW-6	904.70	82.97	821.73	83.78	820.92	83.46	821.24	82.11	822.59
MW-7	897.73	NM	NM	72.22	825.51	NM	NM	70.82	826.91
MW-8	904.24	NM	NM	NM	NM	82.45	821.79	81.13	823.11
MW-9A	905.30	83.29	822.01	84.10	821.20	83.80	821.50	82.43	822.87
MW-9B	905.30	83.50	821.80	84.32	820.98	84.02	821.28	82.65	822.65
MW-12A	897.09	NM	NM	NM	NM	73.37	823.72	72.14	824.95
MW-13A	896.86	NM	NM	NM	NM	NM	NM	72.87	823.99
MW-13B	896.81	NM	NM	NM	NM	NM	NM	NM	NM
MW-18	898.38	NM	NM	NM	NM	NM	NM	65.18	833.20
MW-30A	898.59	NM	NM	NM	NM	75.50	823.09	74.39	824.20
MW-62A	893.69	NM	NM	NM	NM	80.56	813.13	79.30	814.39
MW-63A	899.05	80.90	818.15	81.65	817.40	81.34	817.71	80.02	819.03
MW-64A	894.89	NM	NM	NM	NM	73.35	821.54	72.31	822.58
MW-64B	895.24	NM	NM	73.97	821.27	NM	NM	72.64	822.60
MW-64C	894.75	NM	NM	73.48	821.27	NM	NM	72.16	822.59
MW-65A	891.68	NM	NM	NM	NM	70.18	821.50	69.16	822.52
MW-65B	891.62	NM	NM	NM	NM	70.10	821.52	NM	NM
MW-65C	891.77	NM	NM	NM	NM	70.23	821.54	NM	NM
MW-66A	900.53	78.90	821.63	79.58	820.95	79.26	821.27	78.04	822.49
MW-66B	900.26	NM	NM	79.29	820.97	78.97	821.29	77.77	822.49
MW-66C	900.43	NM	NM	NM	NM	79.11	821.32	NM	NM
East Disposal Site									
MW-17B	899.12	NM	NM	45.04	854.08	NM	NM	41.73	857.39
MW-17C	899.50	NM	NM	46.34	853.16	NM	NM	43.09	856.41
MW-19	898.89	NM	NM	61.92	836.97	NM	NM	60.02	838.87
MW-72	899.26	44.45	854.81	44.96	854.30	44.28	854.98	41.64	857.62
MW-73	899.71	42.48	857.23	43.39	856.32	39.10	860.61	34.07	865.64
WW-11	901.36	NM	NM	NM	NM	44.20	857.16	46.36	855.00
WW-11P	901.16	NM	NM	NM	NM	NM	NM	49.34	851.82
Southwest Corner									
EW-3	897.22	NM	NM	NM	NM	81.06	816.16	NM	NM
EW-4	898.23	NM	NM	NM	NM	80.78	817.45	NM	NM
MW-4A	897.25	76.20	821.05	76.80	820.45	76.40	820.85	75.38	821.87
MW-4B	896.65	75.64	821.01	76.22	820.43	75.84	820.81	74.84	821.81
MW-10A	894.84	NM	NM	69.10	825.74	68.26	826.58	67.88	826.96
MW-10B	894.91	NM	NM	70.77	824.14	NM	NM	69.53	825.38
MW-11A	896.76	NM	NM	NM	NM	72.76	824.00	71.79	824.97
MW-11B	896.27	NM	NM	73.23	823.04	NM	NM	71.76	824.51
MW-21A	899.27	NM	NM	NM	NM	78.21	821.06	77.07	822.20
MW-22A	900.79	NM	NM	NM	NM	NM	NM	NM	NM
MW-22B	900.71	NM	NM	NM	NM	NM	NM	NM	NM
MW-23A	895.99	74.98	821.01	75.51	820.48	75.20	820.79	74.19	821.80
MW-23B	895.95	74.69	821.26	75.20	820.75	74.88	821.07	73.88	822.07
MW-33A	885.30	NM	NM	64.68	820.62	NM	NM	63.22	822.08
MW-33B	885.25	NM	NM	64.60	820.65	NM	NM	63.14	822.11
MW-34A	895.36	73.22	822.14	NM	NM	NM	NM	NM	NM

Table 5 Continued . . .

Well ID	Measuring Point Elevation (MSL)	01/31/00		5/22/00		7/17/00		10/9/00	
		Depth to Water (ft)	Water Level Elevation (MSL)	Depth to Water (ft)	Water Level Elevation (MSL)	Depth to Water (ft)	Water Level Elevation (MSL)	Depth to Water (ft)	Water Level Elevation (MSL)
MW-34B	895.28	73.20	822.08	73.65	821.63	73.34	821.94	72.43	822.85
MW-34C	895.25	73.12	822.13	73.59	821.66	73.27	821.98	72.35	822.90
MW-39A	896.17	NM	NM	NM	NM	75.40	820.77	74.39	821.78
MW-39B	896.38	NM	NM	NM	NM	75.66	820.72	NM	NM
MW-67A	895.96	75.12	820.84	75.64	820.32	75.28	820.68	74.33	821.63
MW-67B	895.79	74.90	820.89	75.44	820.35	75.07	820.72	74.10	821.69
MW-68A	896.47	75.47	821.00	76.04	820.43	75.66	820.81	74.67	821.80
MW-68B	896.77	75.79	820.98	76.35	820.42	75.99	820.78	74.98	821.79
MW-69A	898.02	77.06	820.96	77.66	820.36	77.33	820.69	76.27	821.75
MW-69B	898.23	77.27	820.96	77.86	820.37	77.55	820.68	76.47	821.76
MW-70A	895.68	74.22	821.46	74.84	820.84	74.49	821.19	73.57	822.11
MW-70B	895.57	74.36	821.21	74.70	820.87	74.34	821.23	73.43	822.14
MW-71A	894.70	NM	NM	NM	NM	72.44	822.26	71.50	823.20
MW-71B	894.89	NM	NM	NM	NM	NM	NM	NM	NM
PW-1	898.28	NM	NM	75.92	822.36	75.38	822.90	74.43	823.85
PW-2	894.71	NM	NM	NM	NM	NM	NM	NM	NM
PW-3R	896.21	NM	NM	NM	NM	NM	NM	NM	NM
PW-4	895.59	NM	NM	NM	NM	NM	NM	NM	NM
W-7	899.00	NM	NM	NM	NM	NM	NM	NM	NM
Eau Claire County Airport Area									
MW-40A	886.57	NM	NM	NM	NM	NM	NM	66.35	820.22
MW-40B	886.34	NM	NM	67.50	818.84	67.05	819.29	66.08	820.26
MW-41A	884.04	NM	NM	65.25	818.79	NM	NM	63.83	820.21
MW-41B	883.84	NM	NM	65.05	818.79	NM	NM	63.62	820.22
MW-43A	885.34	NM	NM	66.72	818.62	NM	NM	65.30	820.04
MW-43B	885.35	NM	NM	66.72	818.63	NM	NM	65.30	820.05
MW-45A	886.20	NM	NM	72.36	813.84	NM	NM	71.02	815.18
MW-45B	886.26	NM	NM	72.40	813.86	NM	NM	70.82	815.44
MW-45C	886.05	NM	NM	72.19	813.86	NM	NM	71.05	815.00
MW-53A	887.93	NM	NM	84.03	803.90	NM	NM	83.08	804.85
MW-53B	888.25	NM	NM	84.25	804.00	NM	NM	83.28	804.97
MW-55A	881.75	NM	NM	NM	NM	NM	NM	84.51	797.24
MW-55B	882.08	NM	NM	NM	NM	NM	NM	84.86	797.22
MW-55C	881.91	NM	NM	NM	NM	NM	NM	84.60	797.31
RW-3A	881.78	NM	NM	87.93	793.85	NM	NM	87.22	794.56
RW-3B	881.48	NM	NM	87.56	793.92	NM	NM	86.84	794.64
RW-3C	881.30	NM	NM	87.45	793.85	NM	NM	86.70	794.60
Lake Hallie Area									
MW-29A	892.72	NM	NM	76.16	816.56	NM	NM	75.63	817.09
MW-29B	892.49	NM	NM	75.96	816.53	NM	NM	75.42	817.07
Miscellaneous Wells									
MW-27A	890.20	NM	NM	70.71	819.49	NM	NM	69.55	820.65
MW-27B	890.15	NM	NM	70.66	819.49	NM	NM	69.51	820.64
RW-15	874.76	NM	NM	NM	NM	NM	NM	68.71	806.05
RW-16	888.87	NM	NM	71.82	817.05	NM	NM	70.42	818.45
RW-16B	889.66	NM	NM	72.61	817.05	NM	NM	71.19	818.47
RW-16C	890.01	NM	NM	72.96	817.05	NM	NM	71.55	818.46
City Well Field									
EC-1	813.95	NM	NM	24.81	789.14	NM	NM	24.04	789.91
EC-2	814.44	NM	NM	25.57	788.87	NM	NM	24.79	789.65
EC-3	799.58	NM	NM	NM	NM	12.77	786.81	NM	NM

Table 5 Continued . . .

Well ID	Measuring Point Elevation (MSL)	01/31/00		5/22/00		7/17/00		10/9/00	
		Depth to Water (ft)	Water Level Elevation (MSL)	Depth to Water (ft)	Water Level Elevation (MSL)	Depth to Water (ft)	Water Level Elevation (MSL)	Depth to Water (ft)	Water Level Elevation (MSL)
EC-4	800.84	NM	NM	NM	NM	12.86	787.98	NM	NM
EC-5	813.56	NM	NM	NM	NM	24.68	788.88	NM	NM
EC-6	813.19	NM	NM	24.38	788.81	NM	NM	23.59	789.60
EC-7	816.22	NM	NM	NM	NM	23.49	792.73	NM	NM
EC-8	812.93	NM	NM	NM	NM	24.00	788.93	NM	NM

NOTES:

NM = Not measured.

Table 5 Continued . . .

Well ID	Measuring Point Elevation (MSL)	01/23/01		05/07/01		07/16/01		10/15/01	
		Depth to Water (ft)	Water Level Elevation (MSL)	Depth to Water (ft)	Water Level Elevation (MSL)	Depth to Water (ft)	Water Level Elevation (MSL)	Depth to Water (ft)	Water Level Elevation (MSL)
Melby Road Disposal Area									
EW-1R	896.00	NM	NM	NM	NM	79.85	816.15	97.47	798.53
EW-2	895.81	NM	NM	NM	NM	43.80	852.01	94.20	801.61
MW-5A	897.56	80.02	817.54	80.37	817.19	79.55	818.01	78.35	819.21
MW-5B	897.02	79.83	817.19	80.18	816.84	79.37	817.65	78.17	818.85
MW-6	904.70	82.00	822.70	82.35	822.35	81.54	823.16	80.33	824.37
MW-7	897.73	70.86	826.87	71.18	826.55	70.24	827.49	69.36	828.37
MW-8	904.24	80.98	823.26	NM	NM	80.51	823.73	79.30	824.94
MW-9A	905.30	82.29	823.01	82.67	822.63	81.84	823.46	80.63	824.67
MW-9B	905.30	82.51	822.79	82.88	822.42	82.05	823.25	80.85	824.45
MW-12A	897.09	72.25	824.84	72.67	824.42	71.75	825.34	70.63	826.46
MW-13A	896.86	72.92	823.94	73.31	823.55	72.35	824.51	71.17	825.69
MW-18	898.38	65.67	832.71	65.86	832.52	64.94	833.44	64.60	833.78
MW-62A	893.69	79.16	814.53	79.51	814.18	78.72	814.97	77.52	816.17
MW-63A	899.05	79.91	819.14	80.25	818.80	79.43	819.62	78.21	820.84
MW-64A	894.89	NM	NM	75.52	819.37	71.71	823.18	70.50	824.39
MW-64B	895.24	NM	NM	72.87	822.37	72.05	823.19	70.83	824.41
MW-64C	894.75	NM	NM	72.38	822.37	71.56	823.19	70.38	824.37
MW-65A	891.68	NM	NM	69.40	822.28	68.58	823.10	67.37	824.31
MW-65B	891.62	NM	NM	69.32	822.30	68.50	823.12	67.29	824.33
MW-65C	891.77	NM	NM	69.47	822.30	68.65	823.12	67.45	824.32
MW-66A	900.53	77.92	822.61	78.28	822.25	77.46	823.07	76.26	824.27
MW-66B	900.26	NM	NM	78.01	822.25	77.19	823.07	75.98	824.28
East Disposal Site									
MW-17A	899.10	dry	dry	dry	dry	40.45	858.65	40.60	858.50
MW-17B	899.12	NM	NM	42.18	856.94	40.71	858.41	41.98	857.14
MW-17C	899.50	NM	NM	43.54	855.96	42.10	857.40	43.31	856.19
MW-19	898.89	60.66	838.23	60.68	838.21	59.43	839.46	59.47	839.42
MW-72	899.26	43.61	855.65	42.04	857.22	40.57	858.69	38.35	860.91
MW-73	899.71	40.74	858.97	32.73	866.98	33.51	866.20	41.92	857.79
WW-11	901.36	47.50	853.86	NM	NM	45.15	856.21	NM	NM
Southwest Corner									
EW-3	897.22	81.53	815.69	81.43	815.79	81.20	816.02	78.80	818.42
EW-4	898.23	79.12	819.11	79.63	818.60	78.70	819.53	78.50	819.73
MW-4A	897.25	75.21	822.04	75.56	821.69	74.77	822.48	73.60	823.65
MW-4B	896.65	74.66	821.99	75.01	821.64	74.22	822.43	73.04	823.61
MW-10A	894.84	68.26	826.58	68.27	826.57	67.55	827.29	66.89	827.95
MW-10B	894.91	NM	NM	69.85	825.06	69.01	825.90	67.98	826.93
MW-11A	896.76	71.94	824.82	72.20	824.56	71.37	825.39	70.33	826.43
MW-11B	896.27	NM	NM	72.17	824.10	71.34	824.93	70.29	825.98
MW-21A	899.27	76.92	822.35	NM	NM	76.50	822.77	75.29	823.98
MW-23A	895.99	73.98	822.01	74.05	821.94	73.55	822.44	72.41	823.58
MW-23B	895.95	73.69	822.26	74.35	821.60	73.26	822.69	72.11	823.84
MW-33A	885.30	(1)	(1)	63.44	821.86	(1)	(1)	61.46	823.84
MW-33B	885.25	(1)	(1)	63.37	821.88	(1)	(1)	61.40	823.85
MW-34A	895.36	dry	dry	72.67	822.69	71.90	823.46	70.82	824.54
MW-34B	895.28	72.28	823.00	72.54	822.74	71.85	823.43	70.75	824.53
MW-34C	895.25	72.20	823.05	73.76	821.49	71.75	823.50	70.62	824.63
MW-39A	896.17	74.17	822.00	NM	NM	73.75	822.42	72.60	823.57
MW-39B	896.38	(1)	(1)	(1)	(1)	74.01	822.37	72.85	823.53
MW-67A	895.96	74.15	821.81	74.49	821.47	73.73	822.23	72.55	823.41

Table 5 Continued

Well ID	Measuring Point Elevation (MSL)	01/23/01		05/07/01		07/16/01		10/15/01	
		Depth to Water (ft)	Water Level Elevation (MSL)	Depth to Water (ft)	Water Level Elevation (MSL)	Depth to Water (ft)	Water Level Elevation (MSL)	Depth to Water (ft)	Water Level Elevation (MSL)
MW-67B	895.79	73.95	821.84	74.28	821.51	73.52	822.27	72.35	823.44
MW-68A	896.47	74.47	822.00	74.83	821.64	74.05	822.42	72.87	823.60
MW-68B	896.77	74.80	821.97	75.14	821.63	74.35	822.42	73.22	823.55
MW-69A	898.02	76.05	821.97	76.63	821.39	75.63	822.39	74.78	823.24
MW-69B	898.23	76.27	821.96	76.44	821.79	75.84	822.39	74.68	823.55
MW-70A	895.68	73.41	822.27	73.76	821.92	73.00	822.68	71.85	823.83
MW-70B	895.57	73.28	822.29	73.62	821.95	72.86	822.71	71.71	823.86
MW-71A	894.70	71.24	823.46	71.64	823.06	70.84	823.86	69.69	825.01
MW-71B	894.89	(2)	(2)	(2)	(2)	(2)	(2)	70.20	824.69
PW-1	898.28	74.51	823.77	74.77	823.51	73.96	824.32	72.89	825.39
PW-2	894.71	NM	NM	NM	NM	72.72	821.99	70.39	824.32
PW-3R	896.21	NM	NM	NM	NM	73.58	822.63	72.40	823.81
Eau Claire County Airport Area									
MW-40B	886.34	(1)	(1)	NM	NM	(1)	(1)	NM	NM
MW-41A	884.04	(1)	(1)	63.92	820.12	(1)	(1)	62.11	821.93
MW-41B	883.84	(1)	(1)	63.71	820.13	(1)	(1)	61.90	821.94
MW-43A	885.34	(1)	(1)	65.39	819.95	(1)	(1)	63.58	821.76
MW-43B	885.35	(1)	(1)	65.38	819.97	(1)	(1)	63.58	821.77
MW-45A	886.20	(1)	(1)	70.88	815.32	(1)	(1)	69.32	816.88
MW-45B	886.26	(1)	(1)	70.90	815.36	(1)	(1)	69.37	816.89
MW-45C	886.05	(1)	(1)	70.71	815.34	(1)	(1)	69.11	816.94
MW-53A	887.93	(1)	(1)	82.40	805.53	(1)	(1)	81.41	806.52
MW-53B	888.25	(1)	(1)	82.61	805.64	(1)	(1)	81.60	806.65
RW-3A	881.78	(1)	(1)	85.84	795.94	(1)	(1)	85.80	795.98
RW-3B	881.48	(1)	(1)	85.46	796.02	(1)	(1)	85.42	796.06
RW-3C	881.30	(1)	(1)	85.33	795.97	(1)	(1)	85.28	796.02
Lake Hallie Area									
MW-29A	892.72	(1)	(1)	75.66	817.06	(1)	(1)	74.84	817.88
MW-29B	892.49	(1)	(1)	75.45	817.04	(1)	(1)	74.65	817.84
Miscellaneous Wells									
MW-27A	890.20	(1)	(1)	69.78	820.42	(1)	(1)	68.09	822.11
MW-27B	890.15	(1)	(1)	69.75	820.40	(1)	(1)	68.03	822.12
RW-16	888.87	(1)	(1)	70.42	818.45	(1)	(1)	68.72	820.15
RW-16B	889.66	(1)	(1)	71.21	818.45	(1)	(1)	69.51	820.15
RW-16C	890.01	(1)	(1)	71.57	818.44	(1)	(1)	69.85	820.16
City Well Field									
EC-1	813.95	(1)	(1)	23.11	790.84	(1)	(1)	22.67	791.28
EC-2	814.44	(1)	(1)	22.35	792.09	(1)	(1)	23.43	791.01
EC-3	799.58	(2)	(2)	(2)	(2)	14.89	784.69	(2)	(2)
EC-4	800.84	(2)	(2)	(2)	(2)	14.83	786.01	(2)	(2)
EC-5	813.56	(2)	(2)	(2)	(2)	23.68	789.88	22.98	790.58
EC-6	813.19	(1)	(1)	21.88	791.31	(1)	(1)	22.23	790.96
EC-7	816.22	(2)	(2)	(2)	(2)	22.83	793.39	22.93	793.29
EC-8	812.93	(2)	(2)	(2)	(2)	24.30	788.63	(2)	(2)

NOTE:

NM = Not measured.

FOOTNOTES:

(1) Water measured semi-annually.

(2) Water measured annually.

Table 5 Continued . . .

Well ID	Measuring Point Elevation (MSL)	01/08/02		04/22/02	
		Depth to Water (ft)	Water Level Elevation (MSL)	Depth to Water (ft)	Water Level Elevation (MSL)
Melby Road Disposal Area					
EW-1R	896.00	81.10	814.90	79.55	816.45
EW-2	895.81	(1)	(1)	82.00	813.81
MW-5A	897.56	78.54	819.02	79.13	818.43
MW-5B	897.02	78.34	818.68	78.95	818.07
MW-6	904.70	(1)	(1)	81.13	823.57
MW-7	897.73	69.67	828.06	70.25	827.48
MW-8	904.24	(1)	(1)	80.13	824.11
MW-9A	905.30	80.83	824.47	81.42	823.88
MW-9B	905.30	81.03	824.27	81.64	823.66
MW-12A	897.09	70.89	826.20	71.44	825.65
MW-13A	896.86	71.41	825.45	72.01	824.85
MW-18	898.38	64.93	833.45	65.32	833.06
MW-62A	893.69	77.70	815.99	78.29	815.40
MW-63A	899.05	78.43	820.62	79.02	820.03
MW-64A	894.89	70.70	824.19	71.30	823.59
MW-64B	895.24	71.04	824.20	71.62	823.62
MW-64C	894.75	70.54	824.21	71.14	823.61
MW-65A	891.68	67.55	824.13	68.16	823.52
MW-65B	891.62	67.47	824.15	68.07	823.55
MW-65C	891.77	67.61	824.16	68.25	823.52
MW-66A	900.53	76.44	824.09	77.05	823.48
MW-66B	900.26	76.17	824.09	76.78	823.48
East Disposal Site					
MW-17A	899.10	dry	dry	dry	dry
MW-17B	899.12	42.58	856.54	42.61	856.51
MW-17C	899.50	43.86	855.64	43.92	855.58
MW-19	898.89	59.94	838.95	60.36	838.53
MW-72	899.26	42.59	856.67	42.58	856.68
MW-73	899.71	39.95	859.76	36.62	863.09
WW-11	901.36	46.22	855.14	46.35	855.01
Southwest Corner					
EW-3	897.22	79.42	817.80	80.35	816.87
EW-4	898.23	77.71	820.52	78.25	819.98
MW-4A	897.25	73.74	823.51	74.34	822.91
MW-4B	896.65	73.18	823.47	73.78	822.87
MW-10A	894.84	67.15	827.69	67.64	827.20
MW-10B	894.91	68.16	826.75	68.74	826.17
MW-11A	896.76	70.55	826.21	71.06	825.70
MW-11B	896.27	70.55	825.72	71.02	825.25
MW-21A	899.27	(1)	(1)	76.05	823.22
MW-23A	895.99	72.53	823.46	73.12	822.87
MW-23B	895.95	72.22	823.73	72.85	823.10
MW-33A	885.30	(1)	(1)	62.20	823.10
MW-33B	885.25	(1)	(1)	62.13	823.12
MW-34A	895.36	dry	dry	71.53	823.83
MW-34B	895.28	70.90	824.38	71.48	823.80
MW-34C	895.25	70.78	824.47	71.36	823.89
MW-39A	896.17	72.72	823.45	73.30	822.87
MW-39B	896.38	72.98	823.40	73.56	822.82
MW-67A	895.96	72.68	823.28	73.30	822.66

Table 5 Continued . . .

Well ID	Measuring Point Elevation (MSL)	01/08/02		04/22/02	
		Depth to Water (ft)	Water Level Elevation (MSL)	Depth to Water (ft)	Water Level Elevation (MSL)
MW-67B	895.79	72.49	823.30	73.11	822.68
MW-68A	896.47	73.01	823.46	73.61	822.86
MW-68B	896.77	73.35	823.42	73.91	822.86
MW-69A	898.02	74.60	823.42	75.19	822.83
MW-69B	898.23	74.81	823.42	75.40	822.83
MW-70A	895.68	72.00	823.68	72.61	823.07
MW-70B	895.57	71.86	823.71	72.47	823.10
MW-71A	894.70	69.81	824.89	70.40	824.30
MW-71B	894.89	(2)	(2)	70.90	823.99
PW-1	898.28	73.09	825.19	73.62	824.66
PW-2	894.71	(1)	(1)	71.13	823.58
PW-3R	896.21	72.57	823.64	73.16	823.05
Eau Claire County Airport Area					
MW-40B	886.34	(1)	(1)	lost	lost
MW-41A	884.04	(1)	(1)	62.73	821.31
MW-41B	883.84	(1)	(1)	62.52	821.32
MW-43A	885.34	(1)	(1)	64.20	821.14
MW-43B	885.35	(1)	(1)	64.18	821.17
MW-45A	886.20	(1)	(1)	69.82	816.38
MW-45B	886.26	(1)	(1)	69.86	816.40
MW-45C	886.05	(1)	(1)	69.65	816.40
MW-53A	887.93	(1)	(1)	81.60	806.33
MW-53B	888.25	(1)	(1)	81.80	806.45
RW-3A	881.78	(1)	(1)	85.21	796.57
RW-3B	881.48	(1)	(1)	84.82	796.66
RW-3C	881.30	(1)	(1)	84.71	796.59
Lake Hallie Area					
MW-29A	892.72	(1)	(1)	75.25	817.47
MW-29B	892.49	(1)	(1)	75.06	817.43
Miscellaneous Wells					
MW-27A	890.20	(1)	(1)	68.82	821.38
MW-27B	890.15	(1)	(1)	68.76	821.39
RW-16	888.87	(1)	(1)	69.31	819.56
RW-16B	889.66	(1)	(1)	70.07	819.59
RW-16C	890.01	(1)	(1)	70.44	819.57
City Well Field					
EC-1	813.95	(1)	(1)	21.71	792.24
EC-2	814.44	(1)	(1)	22.48	791.96
EC-3	799.58	(2)	(2)	9.45	790.13
EC-4	800.84	(2)	(2)	9.55	791.29
EC-5	813.56	(2)	(2)	22.04	791.52
EC-6	813.19	(1)	(1)	21.21	791.98
EC-7	816.22	(2)	(2)	21.15	795.07
EC-8	812.93	(2)	(2)	21.75	791.18

NOTE:

NM = Not measured.

FOOTNOTES:

(1) Water measured semi-annually.

(2) Water measured annually.

NATIONAL PRESTO INDUSTRIES, INC.
EAU CLAIRE, WISCONSIN

TABLE 6

ANALYTICAL RESULTS FOR SOUTHWEST CORNER MONITORING WELL SAMPLES (PLUME 1.2) (ug/l)

Date	MW-4A				
	L1 - DCA	L1 - DCE	PCE	L1,1 - TCA	TCE
	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
MCL/ES/PAL Limitations					
10/23/97	0.4 U	0.5 U	0.6 U	0.7 U	0.4 U
01/27/98	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U
04/22/98	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U
07/20/98	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U
10/26/98	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U
01/18/99	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U
04/12/99	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U
07/27/99	0.10 U	0.15 U	0.15 U	0.20 U	0.40 U
10/06/99	0.15 U	0.15 U	0.15 U	0.15 U	0.10 U
02/01/00	0.15 U	0.15 U	0.15 U CSL	0.15 U	0.4 U
06/06/00	0.15 U	0.15 U, SPH	0.15 U	0.15 U	0.4 U
07/18/00	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U
10/11/00	0.15 U, CSH, SPH	0.15 U	0.15 U	0.15 U	0.4 U
01/24/01	0.15 U, SPH	0.15 U	0.15 U	0.15 U, SPH	0.4 U
05/09/01	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U
07/17/01	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U
10/18/01	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U
01/09/02	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U
04/22/02	0.36 U	0.39 U	0.32 U	0.42 U	0.36 U

Date	MW-4B				
	L1 - DCA	L1 - DCE	PCE	L1,1 - TCA	TCE
	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
MCL/ES/PAL Limitations					
10/23/97	0.4 U	0.5 U	0.6 U	0.924	1.45
01/27/98	0.20 U	0.20 U	0.20 U	0.902	0.797
04/22/98	0.20 U	0.20 U	0.20 U	0.770	2.06
07/20/98	0.532	0.20 U	0.20 U	5.61	0.975
10/26/98	0.20 U	0.20 U	0.20 U	0.465	1.40
01/18/99	0.20 U	0.20 U	0.20 U	0.563 J	0.920
04/12/99	0.20 U	0.20 U	0.20 U	0.443 J	1.45 CSH
07/27/99	0.191 J	0.15 U	0.213 J	0.942	2.46
10/06/99	0.164 J	0.15 U	0.15 U	0.764	2.48
02/01/00	0.15 U	0.15 U	0.15 U CSL	0.15 U	0.617 J
06/06/00	0.15 U	0.15 U	0.15 U	0.552	1.68
07/18/00	0.15 U	0.15 U	0.15 U	0.15 U	0.626 J
10/11/00	0.15 U, CSH, SPH	0.15 U	0.15 U	0.15 U	0.4 U
01/24/01	0.15 U, SPH	0.15 U	0.15 U	0.15 U, SPH	0.538 J
05/09/01	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U
07/17/01	0.38 U	0.38 U	0.26 U	0.435 J	2.03
10/18/01	0.38 U	0.38 U	0.26 U	0.2 U	1.63
01/09/02	0.38 U	0.38 U	0.26 U	0.2 U	0.429 J
04/22/02	0.36 U	0.39 U	0.32 U	0.42 U	2.03

Table 6 Continued . . .

Date	MW-10A				
	LI - DCA	LI - DCE	PCE	LI - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
10/22/97	6.78	0.5 U	0.6 U	5.63	0.4 U
01/27/98	4.56	0.20 U	0.20 U	3.19	0.36 U
04/21/98	3.28	0.20 U	0.20 U	2.21	0.20 U
07/21/98	3.43	0.20 U	0.20 U	2.29	0.36 U
10/27/98	3.59	0.20 U	0.20 U	2.20	0.36 U
01/18/99	NS	NS	NS	NS	NS
04/12/99	1.65	0.20 U	0.20 U	0.776	0.36 U
07/26/99	NS	NS	NS	NS	NS
10/05/99	NS	NS	NS	NS	NS
02/01/00	NS	NS	NS	NS	NS
06/06/00	NS	NS	NS	NS	NS
10/11/00	1.27	0.15 U	0.15 U	0.723	0.4 U

Date	MW-10B				
	LI - DCA	LI - DCE	PCE	LI - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
10/22/97	3.02	0.5 U	0.6 U	3.75	0.4 U
01/27/98	3.44	0.20 U	0.20 U	3.34	0.36 U
04/21/98	2.33	0.20 U	0.20 U	2.34	0.36 U
07/21/98	2.49	0.20 U	0.20 U	2.10	0.433
10/27/98	2.01	0.20 U	0.20 U	1.34	0.36 U
01/18/99	1.46	0.20 U	0.20 U	1.06	0.36 U
04/12/99	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U
07/26/99	0.10 U	0.15 U	0.15 U	0.20 U	0.4 U
10/05/99	NS	NS	NS	NS	NS
02/01/00	NS	NS	NS	NS	NS
06/06/00	NS	NS	NS	NS	NS
10/11/00	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U

Date	MW-11A				
	LI - DCA	LI - DCE	PCE	LI - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
10/22/97	1.56	0.5 U	0.6 U	7.34	0.4 U
01/27/98	NS	NS	NS	NS	NS
04/21/98	1.72	0.20 U	0.20 U	9.70	0.36 U
07/20/98	NS	NS	NS	NS	NS
10/27/98	0.20 U	0.20 U	0.216	1.16	0.36 U
01/18/99	NS	NS	NS	NS	NS
04/12/99	0.20 U	0.20 U	0.20 U	0.678	0.36 U
07/26/99	NS	NS	NS	NS	NS
10/06/99	0.15 U	0.15 U	0.15 U	1.26	0.10 U SPL, Dup
02/01/00	NS	NS	NS	NS	NS
06/07/00	NS	NS	NS	NS	NS
10/11/00	NS	NS	NS	NS	NS
05/08/01	0.15 U	0.15 U	0.15 U	0.473 J	0.4 U, CSL
10/16/01	0.38 U	0.38 U	0.26 U	0.207 J	0.26 U
04/22/02	0.36 U	0.39 U	0.32 U	0.577 J	0.36 U

Table 6 Continued . . .

Date	MW-11B				
	L1 - DCA	L1 - DCE	PCE	L11 - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
10/22/97	0.4 U	0.5 U	0.6 U	0.7 U	0.4 U
01/27/98	NS	NS	NS	NS	NS
04/21/98	0.20 U	0.20 U	0.20 U	0.268	0.36 U
07/20/98	NS	NS	NS	NS	NS
10/27/98	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U
01/18/99	NS	NS	NS	NS	NS
04/12/99	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U
07/26/99	NS	NS	NS	NS	NS
10/06/99	0.15 U	0.15 U	0.15 U	0.438 J	0.10 U SPL, Dup
02/01/00	NS	NS	NS	NS	NS
06/07/00	0.15 U	0.15 U	0.15 U	0.15 U	0.40 U
10/11/00	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U
05/08/01	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U, CSL
10/16/01	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U
04/22/02	0.36 U	0.39 U	0.32 U	0.577 J	0.36 U

Date	MW-23A				
	L1 - DCA	L1 - DCE	PCE	L11 - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
10/23/97	0.4 U	0.5 U	0.6 U	1.38	3.53
01/28/98	0.20 U	0.20 U	0.20 U	1.26	3.43
04/22/98	0.20 U	0.20 U	0.20 U	0.965	3.19
07/20/98	0.20 U	0.20 U	0.245	0.931	2.90
10/28/98	0.20 U	0.20 U	0.20 U	0.815	2.71
01/18/99	0.20 U	0.20 U	0.219 J	0.742 J	2.54
04/13/99	0.20 U	0.20 U	0.259 J	0.89	2.70
07/28/99	0.10 U	0.15 U	0.181 J	0.745	2.34
10/06/99	0.194 J	0.15 U	0.164 J	0.958	3.46
02/01/00	0.15 U	0.15 U	0.152 J CSL	0.531	2.01
06/06/00	0.15 U	0.15 U, CSH	0.15 U	0.521	1.93
07/18/00	0.15 U	0.15 U	0.15 U	0.395 J	1.48
01/24/01	0.15 U, SPH	0.15 U	0.15 U	0.2 J, SPH	2.18
05/09/01	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U
07/17/01	0.38 U	0.38 U	0.26 U	0.551 J	2.28
10/18/01	0.38 U	0.38 U	0.26 U	0.2 U	1.90
01/09/02	0.38 U	0.38 U	0.26 U	0.2 U	1.81
04/22/02	0.36 U	0.39 U	0.32 U	0.501 J	2.15

Table 6 Continued . . .

Date	MW-23B				
	L1 - DCA	L1 - DCE	PCE	L11 - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
10/23/97	0.4 U	0.5 U	0.6 U	1.47	4.07
01/28/98	0.20 U	0.20 U	0.20 U	0.545	1.34
04/22/98	0.20 U	0.20 U	0.20 U	1.19	3.95
07/20/98	0.20 U	0.20 U	0.20 U	0.652	1.70
10/28/98	0.20 U	0.20 U	0.282	1.06	3.27
01/18/99	0.20 U	0.20 U	0.20 U	0.233 J	0.752
04/13/99	0.271 J	0.20 U	0.361 J	1.30	3.78
07/28/99	0.229 J	0.15 U	0.218 J	1.12	3.33
10/06/99	0.306 J	0.15 U	0.201 J	1.28	4.06
02/01/00	0.15 U	0.15 U	0.186 J CSL	0.559	2.08
06/06/00	0.15 U	0.15 U, SPH	0.15 U	0.446 J	1.78
07/18/00	0.188 J	0.15 U	0.156 J	0.765	2.55
01/24/01	0.15 U, SPH	0.15 U	0.15 U	0.426 J, SPH	2.65
05/09/01	0.15 U	0.15 U	0.15 U	0.15 U	0.459 J
07/17/01	0.38 U	0.38 U	0.26 U	0.734	3.06
10/18/01	0.38 U	0.38 U	0.26 U	0.294 J	2.75
01/09/02	0.38 U	0.38 U	0.26 U	0.2 U	0.427 J
04/22/02	0.36 U	0.39 U	0.32 U	0.841 J	3.16

Date	MW-34A				
	L1 - DCA	L1 - DCE	PCE	L11 - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
10/22/97	11.7	0.5 U	1.35	15.0	46.0
01/27/98	10.2	0.20 U	1.21	13.3	39.7
04/21/98	15.4	0.20 U	1.01	17.9	24.1
07/21/98	13.0	0.20 U	1.33	14.5	15.1
10/27/98	7.23	0.20 U	1.22	8.44	17.0
01/18/99	3.48	0.20 U	0.20 U	4.03	7.59
04/12/99	8.17	0.20 U	1.05	7.8	5.94 CSH
07/27/99	5.58	0.15 U	0.899	5.66	7.99
10/06/99	4.20	0.15 U	0.786	5.28	13.9 Dup. SPL
02/02/00	(1)	(1)	(1)	(1)	(1)
06/07/00	(1)	(1)	(1)	(1)	(1)
07/18/00	(1)	(1)	(1)	(1)	(1)
10/11/00	(1)	(1)	(1)	(1)	(1)
02/07/02	0.406 J	0.38 U	0.85	0.773 J	42.1
02/21/02	0.38 U	0.38 U	0.931	0.99	42.4
04/22/02	0.627 J	0.39 U, SPL	1.24 SPL	1.90	47.3

Table 6 Continued . . .

Date	MW-34B				
	LI - DCA	LI - DCE	PCE	LLI - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
10/22/97	1.17	0.5 U	0.6 U	1.50	0.490
01/27/98	1.91	0.20 U	0.260	2.37	0.895
04/21/98	1.10	0.20 U	0.20 U	1.50	0.36 U
07/21/98	0.781	0.20 U	0.210	0.958	0.401
10/27/98	0.942	0.20 U	0.20 U	0.959	0.451
01/18/99	0.697 J	0.20 U	0.20 U	0.740 J	0.36 U
04/12/99	0.616 J	0.20 U	0.242 J	0.592 J	0.36 U
07/27/99	0.318 J	0.15 U	0.15 U	0.354 J	0.40 U
10/06/99	0.392 J	0.15 U	0.15 U	0.437 J	0.490 Dup. SPL
02/02/00	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U CSH. Dup
06/07/00	0.292 J	0.15 U	0.15 U	0.214 J	0.451 J
07/18/00	0.161 J	0.15 U	0.15 U	0.15 U	0.40 U
10/11/00	0.269 J	0.15 U	0.181 J	0.252 J	4.99
01/24/01	0.156 J. SPH	0.15 U	0.15 U	0.15 U. SPH	0.951 J
05/08/01	0.263 J	0.15 U	0.15 U	0.248 J	0.40 U
07/17/01	0.38 U	0.38 U	0.26 U	0.287 J	0.369 J
10/16/01	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U
01/09/02	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U
04/22/02	0.36 U	0.39 U	0.32 U	0.42 U	0.36 U

Date	MW-34C				
	LI - DCA	LI - DCE	PCE	LLI - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
02/02/00	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U CSH. Dup
06/07/00	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U
07/18/00	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U
10/11/00	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U
01/24/01	0.15 U. SPH	0.15 U	0.15 U	0.15 U. SPH	0.4 U
05/08/01	0.15 U	0.15 U	0.15 U	0.15 U	0.40 U
07/17/01	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U
10/16/01	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U
01/09/02	0.38 U	0.38 U	0.26 U	0.2 U	0.384 J
04/22/02	0.36 U	0.39 U	0.32 U	0.42 U	0.36 U

Table 6 Continued...

Date	MW-39B				
	LI - DCA	LI - DCE	PCE	LI, LI - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
04/22/98	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U
07/28/99	0.10 U	0.15 U	0.15 U	0.20 U	0.40 U
07/18/00	0.15 U	0.15 U	0.15 U	0.15 U	0.40 U
07/17/01	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U

Date	MW-67A				
	LI - DCA	LI - DCE	PCE	LI, LI - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
10/22/97	0.432	0.5 U	0.6 U	1.76	5.62
01/27/98	0.604	0.20 U	0.266	1.70	5.78
04/22/98	0.663	0.20 U	0.213	1.66	4.83
07/20/98	1.55	0.20 U	0.470	2.34	10.5
10/27/98	0.702	0.20 U	0.249	1.15	2.98
01/18/99	0.20 U	0.20 U	0.20 U	0.379 J	1.42
04/12/99	0.20 U	0.20 U	0.226 J	0.271 J	1.06 CSH, J
07/27/99	1.09	0.15 U	0.324 J	1.52	3.42
10/06/99	0.297 J	0.15 U	0.207 J	0.606	4.17
02/02/00	0.15 U	0.15 U	0.227 J CSL	0.267 J	2.02
06/07/00	0.15 U	0.15 U	0.15 U	0.241 J	1.57
07/18/00	0.15 U	0.15 U	0.15 U	0.241 J	1.42
10/11/00	0.15 U, CSH, SPH	0.15 U	0.15 U	0.15 U	0.4 U
01/24/01	0.15 U, SPH	0.15 U	0.15 U	0.15 U, SPH	1.61
05/08/01	0.264	0.15 U	0.166 J	0.349 J	1.03 J
07/17/01	0.38 U	0.38 U	0.26 U	0.273 J	1.31
10/18/01	0.38 U	0.38 U	0.26 U	0.2 U	1.08
01/09/02	0.38 U	0.38 U	0.26 U	0.2 U	1.16
04/22/02	0.36 U	0.39 U	0.32 U	0.42 U	1.27

Table 6 Continued . . .

Date	MW-67B				
	L1 - DCA	L1 - DCE	PCE	L1,1 - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
10/22/97	1.64	0.5 U	0.6 U	2.05	1.50
01/27/98	1.13	0.20 U	0.20 U	1.58	1.01
04/22/98	0.889	0.20 U	0.20 U	1.38	0.723
07/20/98	0.20 U	0.20 U	0.20 U	0.279	0.403
10/27/98	0.596	0.20 U	0.20 U	0.733	0.680
01/18/99	0.20 U	0.20 U	0.20 U	0.311 J	0.387 J
04/12/99	0.20 U	0.20 U	0.20 U	0.264 J	0.36 U
07/27/99	0.437 J	0.15 U	0.15 U	0.521 J	0.464 J
10/06/99	0.478 J	0.15 U	0.15 U	0.502	0.741
02/02/00	0.254 J	0.15 U	0.15 U, CSL	0.261 J	0.436 J
06/07/00	0.349 J	0.15 U	0.15 U	0.296 J	0.4 U
07/18/00	0.18 J	0.15 U	0.15 U	0.261 J	0.5 J
10/11/00	0.15 U, CSH, SPH	0.15 U	0.15 U	0.15 U	0.401 J
01/24/01	0.15 U, SPH	0.15 U	0.15 U	0.15 U, SPH	0.4 U
05/08/01	0.175 J	0.15 U	0.15 U	0.176 J	0.4 U
07/17/01	0.38 U	0.38 U	0.26 U	0.283 J	0.416 J
10/18/01	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U
01/09/02	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U
04/22/02	0.36 U	0.39 U	0.32 U	0.42 U	0.426 J
Date	MW-68A				
	L1 - DCA	L1 - DCE	PCE	L1,1 - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
10/22/97	0.4 U	0.5 U	0.6 U	0.7 U	1.42
01/28/98	0.20 U	0.20 U	0.20 U	0.20 U	1.10
04/22/98	0.20 U	0.20 U	0.20 U	0.20 U	1.09
07/20/98	0.20 U	0.20 U	0.20 U	0.20 U	1.20
10/27/98	0.20 U	0.20 U	0.20 U	0.20 U	0.935
01/19/99	0.20 U	0.20 U	0.20 U	0.20 U	1.22
04/12/99	0.20 U	0.20 U	0.20 U	0.20 U	0.926 J
07/27/99	0.10 U	0.15 U	0.15 U	0.20 U	0.984 J
10/06/99	0.15 U	0.15 U	0.15 U	0.15 U	1.34
02/01/00	0.15 U	0.15 U	0.15 U, CSL	0.15 U	0.76 J
06/06/00	0.15 U	0.15 U	0.15 U	0.15 U	0.685
07/18/00	0.15 U	0.15 U	0.15 U	0.15 U	0.578 J
10/11/00	0.15 U, CSH, SPH	0.15 U	0.15 U	0.15 U	0.899 J
01/24/01	0.15 U, SPH	0.15 U	0.15 U	0.15 U, SPH	0.705 J
05/08/01	0.15 U	0.15 U	0.15 U	0.15 U	0.757 J
07/17/01	0.38 U	0.38 U	0.26 U	0.2 U	1.14
10/18/01	0.38 U	0.38 U	0.26 U	0.2 U	0.827 J
01/09/02	0.38 U	0.38 U	0.26 U	0.2 U	0.652
04/22/02	0.36 U	0.39 U	0.32 U	0.42 U	0.36 U

Table 6 Continued . . .

Date	MW-68B				
	LI - DCA	LI - DCE	PCE	LI - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
10/22/97	0.4 U	0.5 U	0.6 U	2.21	2.07
01/28/98	0.391	0.20 U	0.20 U	1.80	2.01
04/22/98	0.20 U	0.20 U	0.20 U	0.609	1.31
07/20/98	0.259	0.20 U	0.20 U	1.44	1.46
10/27/98	0.20 U	0.20 U	0.20 U	0.941	0.687
01/19/99	0.20 U	0.20 U	0.20 U	0.625 J	1.02
04/12/99	0.20 U	0.20 U	0.20 U	0.557 J	2.09 CSH
07/27/99	0.178	0.15 U	0.15 U	0.630 J	2.07
10/06/99	0.158 J	0.15 U	0.15 U	0.561	1.97
02/01/00	0.15 U	0.15 U	0.15 U, CSL	0.336 J	1.33
06/06/00	0.15 U	0.15 U	0.15 U	0.224 J	0.967 J
07/18/00	0.15 U	0.15 U	0.15 U	0.213 J	0.996 J
10/11/00	0.15 U, CSH, SPH	0.15 U	0.15 U	0.15 U	0.4 U
01/24/01	0.15 U, SPH	0.15 U	0.15 U	0.15 U, SPH	1.33 J
05/08/01	0.15 U	0.15 U	0.15 U	0.15 U	0.463 J
07/17/01	0.38 U	0.38 U	0.26 U	0.284 J	1.62 J
10/18/01	0.38 U	0.38 U	0.26 U	0.2 U	1.30
01/09/02	0.38 U	0.38 U	0.26 U	0.2 U	0.594 J
04/22/02	0.36 U	0.39 U	0.32 U	0.42 U	1.48

Date	MW-69A				
	LI - DCA	LI - DCE	PCE	LI - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
10/23/97	0.4 U	0.5 U	0.6 U	0.7 U	0.4 U
01/28/98	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U
04/22/98	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U
07/20/98	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U
10/27/98	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U
01/19/99	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U
04/13/99	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U
07/28/99	0.10 U	0.15 U	0.15 U	0.20 U	0.40 U
10/06/99	0.15 U	0.15 U	0.15 U	0.15 U	0.177 J
02/01/00	0.15 U	0.15 U	0.15 U, CSL	0.15 U	0.4 U
06/06/00	0.15 U	0.15 U, CSH	0.15 U	0.15 U	0.4 U
07/18/00	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U
10/13/00	0.15 U	0.15 U	0.15 U	0.09 U	0.197 J
01/24/01	0.15 U	0.15 U	0.15 U	0.15 U, SPH	0.4 U, SPH
05/09/01	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U
07/17/01	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U
10/18/01	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U
01/09/02	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U
04/22/02	0.36 U	0.39 U	0.32 U	0.42 U	0.36 U

Table 6 Continued . . .

Date	MW-69B				
	L1 - DCA	L1 - DCE	PCE	L11 - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
10/23/97	0.4 U	0.5 U	0.6 U	0.7 U	0.4 U
01/28/98	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U
04/22/98	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U
07/20/98	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U
10/27/98	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U
01/19/99	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U
04/13/99	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U
07/28/99	0.10 U	0.15 U	0.15 U	0.20 U	0.40 U
10/06/99	0.15 U	0.15 U	0.15 U	0.15 U	0.10 U
02/01/00	0.15 U	0.15 U	0.15 U CSL	0.15 U	0.4 U
06/06/00	0.15 U	0.15 U, CSH	0.15 U	0.15 U	0.4 U
07/18/00	0.15 U	0.15 U	0.15 U	0.213 J	0.4 U
10/13/00	0.15 U	0.15 U	0.15 U	0.09 U	0.211 J
01/24/01	0.15 U	0.15 U	0.15 U	0.15 U, SPH	0.4 U, SPH
05/09/01	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U
07/17/01	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U
10/18/01	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U
01/09/02	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U
04/22/02	0.36 U	0.39 U	0.32 U	0.42 U	0.36 U

Date	MW-70A				
	L1 - DCA	L1 - DCE	PCE	L11 - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
10/22/97	9.80	0.5 U	1.04	15.5	36.7
01/27/98	1.03	0.20 U	0.20 U	1.44	3.46
04/21/98	8.35	0.20 U	0.815	12.8	22.5
07/21/98	2.54	0.20 U	0.612	3.96	19.4
10/27/98	13.0	0.20 U	1.27	15.7	9.02
01/18/99	10.0	0.20 U	1.30	12.0	10.6
04/12/99	6.32	0.20 U	1.05	6.67	23.7 CSH
07/27/99	5.69	0.15 U	1.05	6.99	17.4
10/06/99	4.81	0.15 U	0.994	6.47	26.4 Dup, SPL
02/02/00	2.28	0.15 U	0.648 CSL	2.67	21.2
06/07/00	0.922	0.15 U	0.33 J	1.20	10.8
07/18/00	0.655	0.15 U	0.381 J	0.881	21.0
10/11/00	0.849 CSH, SPH	0.15 U	0.59	1.24	25.2
01/24/01	0.822	0.15 U	0.597	1.23 SPH	26.7 SPH
05/08/01	1.13	0.15 U	0.803	1.95	35.2
07/17/01	1.52	0.38 U	1.26	2.30	53.1
10/16/01	1.90 U	1.90 U	1.30 U	1.00 U	56.5
01/09/02	1.90 U	1.90 U	1.30 U	1.00 U	75.7
04/22/02	1.80 U	1.95 U	1.60 U	2.25	72.5

Table 6 Continued...

Date	MW-70B				
	L1 - DCA	L1 - DCE	PCE	L11 - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
10/22/97	3.75	0.5 U	0.6 U	5.20	11.1
01/27/98	13.1	0.20 U	1.54	18.6	39.7
04/21/98	4.93	0.20 U	0.374	7.36	8.06
07/21/98	0.856	0.20 U	0.20 U	1.43	1.79
10/1/98	2.33	0.20 U	0.321	3.03	1.90
01/18/99	2.94	0.20 U	0.485 J	3.44	2.13
04/12/99	3.69	0.20 U	0.45 J	3.88	2.24 CSII
07/27/99	1.82	0.15 U	0.344 J	2.00	3.43
10/06/99	2.00	0.15 U	0.379	2.48	8.33 Dup. SPL
02/02/00	0.535	0.15 U	0.15 U	1.69	6.51 CSII, Dup
06/07/00	0.386 J	0.15 U	0.15 U	0.416 J	4.32
07/18/00	0.15 U	0.15 U	0.15 U	0.152 J	1.47
10/11/00	0.525	0.15 U	0.209 J	0.881	5.80
01/24/01	0.446 J	0.15 U	0.184 J	0.581 SPH	11.2 SPH
05/08/01	0.16 J	0.15 U	0.197 J	0.224 J	5.36
07/17/01	0.789 J	0.38 U	0.452 J	1.08	24.3
10/16/01	0.38 U	0.38 U	0.458 J	0.403 J	32.0
01/09/02	0.38 U	0.38 U	0.26 U	0.2 U	7.88
04/22/02	0.378 J	0.39 U	0.32 U	0.595 J	8.90
Date	MW-70A Pump				
	L1 - DCA	L1 - DCE	PCE	L11 - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
02/02/00	2.59	0.15 U	0.647 CSL	3.05	25.9
06/06/00	NS	NS	NS	NS	NS
Date	PW-1				
	L1 - DCA	L1 - DCE	PCE	L11 - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
07/26/99	0.225 J	0.15 U	0.15 U	1.19	0.40 U
10/06/99	0.235 J	0.15 U	0.15 U	1.58 J	0.10 U SPL, Dup
02/01/00	NS	NS	NS	NS	NS
05/25/00	0.15 U	0.15 U	0.15 U	0.58	0.40 U
06/07/00	0.15 U	0.15 U	0.15 U	0.57	0.40 U
10/13/00	0.15 U	0.15 U	0.15 U	2.34	0.193 J
05/08/01	0.15 U	0.15 U	0.15 U	1.13	0.4 U, CSL
10/16/01	0.38 U	0.38 U	0.26 U	0.605 J	0.26 U
04/22/02	0.36 U	0.39 U	0.32 U	1.18 J	0.36 U

Table 6 Continued . . .

NOTES:

ND = Not detected at or above the detection limit.

NS = Not sampled.

U = Compound not detected at or above this value, which is the detection limit.

Concentrations above MCL/NR 140 ESs are shown in bold and shaded.

Concentrations above NR 140 PALs are shown in bold.

CSH = Check standard for this analyte exhibited a high bias. Sample results may also be biased high.

CSL = Check standard for this analyte exhibited a low bias. Sample results may also be biased low.

Dup = Result of duplicate analysis in this quality assurance batch exceeds the limits for precision.

J = Estimated concentration below laboratory quantitation level.

SPH = Matrix spike recovery within analytical batch was high. Sample matrix appears similar to your sample; result may be biased high.

SPL = Matrix spike recovery within analytical batch was low. Sample matrix appears similar to your sample; result may be biased low.

D = Indicates initial analysis exceeded the calibration range; was diluted and re-analyzed.

FOOTNOTE:

(1) Monitoring well MW-34A did not contain any water at the time of each of the four quarterly sampling rounds in 2000.

NATIONAL PRESTO INDUSTRIES, INC.
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TABLE 7

ANALYTICAL RESULTS FOR SOUTHWEST CORNER EXTRACTION WELL SAMPLES (ug/l)

Date	EW-3				
	1,1 - DCA	1,1 - DCE	PCE	1,1,1 - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
08/13/97	3.29	ND	ND	7.98	5.37
09/08/97	3.41	0.17 U	0.29	7.80	6.15
10/13/97	3.40	0.2 U	0.338	6.84	7.41
11/11/97	3.20	0.5 U	0.6 U	7.06	8.96
12/04/97	3.24	0.5 U	0.6 U	7.23	9.20
01/12/98	1.98	0.2 U	0.287	3.96	5.37
02/04/98	3.08	0.20 U	0.363	6.28	8.11
03/05/98	1.61	0.20 U	0.315	3.58	4.86
04/14/98	1.39	0.20 U	0.213	2.77	4.04
05/04/98	1.75	0.20 U	0.215	3.45	5.21
06/02/98	0.977	0.20 U	0.253	2.08	3.17
07/22/98	1.37	0.20 U	0.325	2.30	6.18
08/05/98	1.61	0.20 U	0.376	2.66	4.89
09/14/98	1.30	0.20 U	0.301	2.09	3.27
10/07/98	1.20	0.20 U	0.257	1.82	2.67
11/11/98	1.02	0.20 U	0.245	1.68	2.31
Recovery wells are now sampled quarterly.					
02/02/99	0.817	0.20 U	0.233 J	1.36	2.21 CSH
05/04/99	0.550 CSH	0.20 U	0.20 U	0.917	1.83 CSH
08/16/99	0.490	0.20 U	0.194 J	0.899	2.78
11/17/99	0.521	0.15 U	0.177 J	0.960	3.37
02/08/00	0.283 J	0.15 U	0.22 J	0.477 J	2.04
05/09/00	0.267 J	0.15 U, CSL	0.15 U	0.545	2.07
08/21/00	0.386 J	0.15 U	0.222 J	0.712	3.01
11/15/00	0.285 J	0.15 U	0.176 J	0.558	3.75
02/13/01	0.326 J	0.15 U	0.154 J	0.584	3.90
05/01/01	0.15 U	0.15 U	0.369 J	0.184 J	3.62
08/14/01	0.38 U	0.38 U	0.26 U	0.583 J	4.78
11/26/01	0.38 U	0.38 U	0.26 U	0.265 J	3.36
02/18/02	0.38 U	0.38 U	0.26 U	0.2 U	3.15
05/07/02	0.36 U	0.39 U	0.32 U	0.433 J	2.96

Table 7 Continued . . .

Date	EW-4				
	L.I. - DCA	L.I. - DCE	PCE	L.L.I. - TCA	TCE
	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
MCL/ES/PAL Limitations					
08/13/97	1.69	ND	ND	20.9	1.18
09/08/97	2.39	0.17 U	0.22	24.2	1.74
10/13/97	2.04	0.2 U	0.2 U	15.6	1.72
11/11/97	1.88	0.5 U	0.6 U	16.3	1.89
12/04/97	2.13	0.5 U	0.6 U	16.4	1.92
01/12/98	1.03	0.2 U	0.2 U	10.6	1.14
02/04/98	1.93	0.20 U	0.20 U	15.7	1.94
03/05/98	0.951	0.20 U	0.207	11.2	1.29
04/14/98	1.07	0.20 U	0.20 U	11.1	1.21
05/04/98	1.42	0.20 U	0.20 U	15.9	2.02
06/02/98	0.825	0.20 U	0.20 U	9.79	0.880
07/22/98	2.03	0.20 U	0.275	10.5	1.30
08/05/98	1.61	0.20 U	0.216	11.4	1.35
09/14/98	1.32	0.20 U	0.207	11.1	1.42
10/07/98	1.18	0.20 U	0.20 U	10.5	1.39
11/11/98	0.20 U	0.20 U	0.20 U	10.0	1.46
Recovery wells are now sampled quarterly.					
02/02/99	0.846 J	0.20 U	0.245 J	10.1	1.60 CSH
05/04/99	0.824	0.20 U	0.20 U	10.0	1.47 CSH
08/16/99	0.923	0.20 U	0.154 J	9.87	1.33
11/17/99	1.00	0.15 U	0.15 U	10.8	1.50
02/08/00	0.666	0.15 U	0.213 J	7.71	1.27
05/09/00	0.658	0.15 U, CSL	0.15 U	8.65	1.48
08/21/00	0.664	0.15 U	0.15 U	8.14	1.31 J
11/15/00	0.689	0.15 U	0.154 J	8.04	1.43
02/13/01	0.555	0.15 U	0.172 J	7.10	1.34
05/01/01	0.15 U	0.15 U	0.33 J	6.29	1.95
08/14/01	0.42 J	0.38 U	0.26 U	6.01	2.29
11/26/01	0.38 U	0.38 U	0.26 U	5.84	0.962
02/18/02	0.38 U	0.38 U	0.26 U	6.39	1.48
05/07/02	0.578 J	0.39 U	0.32 U	8.05	1.82

NOTES:

NS = Not sampled.

ND = Not detected at or above the detection limit.

U = Compound not detected at or above this value, which is the detection limit.

Concentrations above the NR 140 PAL are shown in bold.

Concentrations above the NR 140 ES are shown in bold and shaded.

EW-3 and EW-4 were shut down June 4 due to excavation at Drywell #2 and were restarted July 15 and July 20, respectively.

J = Estimated concentration below laboratory quantitation level.

CSH = Check standard exhibited a high bias. Reported value may also be biased high.

CSL = Check standard for this analyte exhibited a low bias. Sample results may also be biased low.

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TABLE 8

DISSOLVED CADMIUM ANALYTICAL RESULTS FOR
MW-10A & B, MW-11A & B, MW-34A & B, AND PW-1 (µg/L)

Date	MW-10A	MW-10B	MW-11A	MW-11B	MW-34A	MW-34B	PW-1
10/22/97	26.1	3.20	NS	NS	2.00	0.789	NA
01/27/98	22.6	4.13	NS	NS	2.28	0.705	NA
04/21/98	40.7	6.26	NS	NS	4.01	1.13	NA
07/29/98	46.2	3.99	NS	NS	2.05	0.84	NA
11/02/98	34.1	5.87	NS	NS	3.76	1.25	NA
01/18/99	0.630	3.34	NS	NS	1.14	25.1	NA
04/12/99	24.6	1.65	NS	NS	2.52	0.9	NA
07/26/99	NS	2.54	NS	NS	2.14	0.820	0.270 J
10/06/99	28.5	3.29	NS	NS	NS	NS	0.440
06/07/00	21.7	4.78	NS	NS	NS	NS	0.4
10/11/00	27.5	0.38	NS	0.2 U	NS	NS	0.48
05/08/01	32.1	0.94	1.64	0.2 U	NS	NS	0.63 J
10/16/01	30.1	0.49	0.33	0.2 U	NS	NS	0.21
04/22/02	30.4	0.451	0.2 U	0.2 U	NS	NS	0.597

NOTES:

PAL for cadmium is 0.5 µg/L; concentrations exceeding the PAL are shown in bold.

MCL/ES for cadmium is 5 µg/L; concentrations exceeding the MCL/ES are shown in bold and shaded.

NA = Not analyzed.

NS = Not sampled.

J = Estimated concentration below laboratory quantitation level.

NATIONAL PRESTO INDUSTRIES, INC.
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TABLE 9

ANALYTICAL RESULTS FOR MELBY ROAD MONITORING WELL SAMPLES (PLUME 3-4) (ug/l)

Date	MW-5A				
	I, I - DCA	I, I - DCE	PCE	I, I, I - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
10/21/97	2.70	0.5 U	0.992	31.3	0.4 U
01/27/98	2.36	0.20 U	0.926	31.2	0.36 U
04/20/98	1.60	0.20 U	0.805	24.7	0.36 U
07/20/98	31.2	0.290	3.71	55.6	0.36 U
10/26/98	4.61	0.220	1.88	34.5	0.36 U
01/19/99	1.51	0.20 U	1.21	21.7	0.36 U
04/14/99	0.732 CSH	0.216 J	0.814	18.2	0.36 U
07/27/99	0.306 J	0.225 J	0.557	9.92	0.40 U
10/06/99	0.180 J	<0.15 U	0.384 J	7.49 J	<0.10 U SPL, Dup
02/01/00	0.15 U	0.15 U	0.337 J	3.63	0.4 U
05/25/00	0.15 U	0.15 U, CSH	0.161 J	2.34	0.4 U
07/17/00	0.15 U	0.15 U	0.195 J	2.13	0.4 U
10/10/00	0.15 U, SPH	0.15 U	0.15 U, J	1.06	0.4 U
01/23/01	0.15 U, SPH	0.15 U	0.266 J	1.17 SPH	0.4 U
05/08/01	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U CSL
07/16/01	0.38 U	0.38 U	0.26 U	1.28	0.26 U, CSH
10/16/01	0.38 U	0.38 U	0.26 U	0.486 J	0.26 U
01/08/02	0.38 U	0.38 U	0.26 U	0.444 J	0.26 U
04/22/02	0.36 U	0.39 U	0.32 U	1.04 J	0.36 U

Date	MW-5B				
	I, I - DCA	I, I - DCE	PCE	I, I, I - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
10/21/97	0.4 U	0.5 U	0.6 U	2.14	0.4 U
01/27/98	0.436	0.20 U	0.20 U	2.23	0.36 U
04/20/98	0.20 U	0.20 U	0.20 U	2.61	0.36 U
07/20/98	31.6	0.290	4.02	59.4	0.36 U
10/26/98	0.20 U	0.20 U	0.20 U	1.48	0.36 U
01/19/99	0.20 U	0.20 U	0.20 U	1.39	0.36 U
04/14/99	0.20 U	0.20 U	0.20 U	0.605 J	0.36 U
07/27/99	0.10 U	0.15 U	0.15 U	0.347 J	0.40 U
10/06/99	0.15 U	0.15 U	0.15 U	0.391 J	0.153 J, SPL, Dup
02/01/00	0.15 U	0.15 U	0.15 U	0.222 J	0.4 U
05/25/00	0.15 U	0.15 U, CSH	0.15 U	0.15 U	0.4 U
07/17/00	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U
10/10/00	0.15 U, SPH	0.15 U	0.15 U	0.15 U	0.4 U
01/23/01	0.15 U, SPH	0.15 U	0.15 U	0.15 U, SPH	0.4 U
05/08/01	0.15 U	0.15 U	0.183 J	1.09	0.4 U CSL
07/16/01	0.38 U	0.38 U	0.26 U	0.2 J	0.26 U, CSH
10/16/01	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U
01/08/02	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U
04/22/02	0.36 U	0.39 U	0.32 U	0.42 U	0.36 U

Table 9 Continued . . .

Date	MW-6				
	L1 - DCA	L1 - DCE	PCE	L11 - TCA	TCE
	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
MCL/ES/PAL Limitations					
10/22/97	0.4 U	0.5 U	0.6 U	2.87	0.4 U
01/27/98	0.20 U	0.20 U	0.20 U	3.24	0.36 U
04/20/98	0.20 U	0.20 U	0.20 U	4.05	0.36 U
07/21/98	0.20 U	0.20 U	0.20 U	3.00	0.36 U
10/27/98	0.20 U	0.20 U	0.20 U	3.31	0.36 U
01/19/99	0.20 U	0.20 U	0.20 U	2.67	0.36 U
04/13/99	0.20 U	0.20 U	0.20 U	2.06	0.36 U
07/26/99	0.10 U	0.15 U	0.15 U	1.64	0.40 U
10/05/99	0.15 U	0.15 U	0.15 U	1.51	0.133 J
02/01/00	0.15 U	0.15 U	0.15 U	1.26	0.4 U
06/06/00	0.15 U	0.15 U, CSH	0.15 U	0.81	0.4 U
07/17/00	0.15 U	0.15 U	0.15 U	0.584	0.4 U
10/10/00	0.15 U, SPH	0.15 U	0.15 U	0.611	0.4 U
01/23/01	0.15 U, SPH	0.15 U	0.15 U	0.261 J, SPH	0.4 U
05/08/01	0.15 U	0.15 U	0.15 U	0.41 J	0.4 U CSL
07/17/01	0.38 U	0.38 U	0.26 U	0.435 J	0.26 U
10/16/01	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U
01/08/02	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U
04/22/02	0.36 U	0.39 U	0.32 U	0.42 U	0.36 U

Date	MW-9A				
	L1 - DCA	L1 - DCE	PCE	L11 - TCA	TCE
	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
MCL/ES/PAL Limitations					
10/22/97	0.4 U	0.5 U	0.6 U	5.63	0.4 U
01/27/98	0.20 U	0.20 U	0.20 U	3.61	0.36 U
04/20/98	0.20 U	0.20 U	0.20 U	9.61	0.36 U
07/21/98	0.20 U	0.20 U	0.20 U	7.74	0.36 U
10/27/98	0.20 U	0.20 U	0.20 U	0.342	0.36 U
01/19/99	0.20 U	0.20 U	0.20 U	1.95	0.36 U
04/13/99	0.20 U	0.20 U	0.20 U	1.27	0.36 U
07/27/99	0.10 U	0.15 U	0.15 U	0.390 J	0.40 U
10/05/99	0.15 U	0.15 U	0.15 U	0.15 U	0.247 J
02/01/00	0.15 U	0.15 U	0.15 U, CSL	0.15 U	0.4 U
05/25/00	0.15 U	0.15 U, CSH	0.15 U	0.418 J	0.4 U
07/17/00	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U
10/11/00	0.15 U, SPH	0.15 U	0.15 U	0.15 U	0.4 U
01/23/01	0.15 U	0.15 U	0.15 U	0.15 U, SPH	0.4 U, SPH
05/08/01	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U
07/16/01	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U, CSH
10/16/01	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U
01/08/02	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U
04/22/02	0.36 U	0.39 U	0.32 U	0.42 U	0.36 U

Table 9 Continued . . .

Date	MW-9B				
	LI - DCA	LI - DCE	PCE	LLI - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
10/22/97	0.4 U	0.5 U	0.6 U	0.7	0.4 U
01/27/98	0.20 U	0.20 U	0.20 U	0.519	0.36 U
04/20/98	0.20 U	0.20 U	0.20 U	0.478	0.36 U
07/21/98	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U
10/27/98	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U
01/19/99	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U
04/13/99	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U
07/27/99	0.10 U	0.15 U	0.15 U	0.20 U	0.40 U
10/05/99	0.15 U	0.15 U	0.15 U	0.15 U	0.10 U
02/01/00	0.15 U	0.15 U	0.15 U, CSL	0.15 U	0.4 U
05/25/00	0.15 U	0.15 U, CSH	0.15 U	0.15 U	0.4 U
07/17/00	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U
10/11/00	0.15 U, SPH	0.15 U	0.15 U	0.15 U	0.4 U
01/23/01	0.15 U	0.15 U	0.15 U	0.15 U, SPH	0.4 U, SPH
05/08/01	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U
07/16/01	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U, CSH
10/16/01	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U
01/09/02	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U
04/22/02	0.36 U	0.39 U	0.32 U	0.42 U	0.36 U

Date	MW-27A				
	LI - DCA	LI - DCE	PCE	LLI - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
04/16/99	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U
10/07/99	0.15 U	0.15 U	0.15 U	0.15 U	0.10 U
02/01/00	NS	NS	NS	NS	NS
05/23/00	NS	NS	NS	NS	NS
10/13/00	0.15 U	0.15 U	0.15 U	0.09 U	0.1 U
05/09/01	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U
10/18/01	0.38 U	0.38 U	0.26 U	0.207 J	0.26 U
04/22/02	0.36 U	0.39 U	0.32 U	0.42 U	0.36 U

Date	MW-27B				
	LI - DCA	LI - DCE	PCE	LLI - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
04/16/99	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U
10/07/99	0.15 U	0.15 U	0.15 U	0.15 U	0.36 U
02/01/00	NS	NS	NS	NS	NS
05/23/00	NS	NS	NS	NS	NS
10/13/00	0.15 U	0.15 U	0.15 U	0.09 U	0.14 J
05/09/01	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U
10/18/01	0.38 U	0.38 U	0.26 U	0.207 J	0.26 U
04/22/02	0.36 U	0.39 U	0.32 U	0.42 U	0.36 U

Table 9 Continued . . .

Date	MW-29A				
	L1 - DCA	L1 - DCE	PCE	L1,1 - TCA	TCE
	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
04/16/99	0.938	0.218 J	0.20 U	2.99	0.36 U
10/07/99	0.772	0.15 U	0.15 U	2.42	0.279 J
02/01/00	NS	NS	NS	NS	NS
05/23/00	0.372 J	0.15 U, CSH	0.15 U	1.19	0.4 U
10/13/00	0.446	0.15 U	0.15 U	1.7	0.308 J
05/09/01	0.15 U	0.15 U	0.15 U	0.717	0.4 U
10/18/01	0.38 U	0.38 U	0.26 U	0.207 J	0.26 U
04/22/02	0.36 U	0.39 U	0.32 U	0.751 J	0.36 U

Date	MW-29B				
	L1 - DCA	L1 - DCE	PCE	L1,1 - TCA	TCE
	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
04/16/99	1.67	0.350 J	0.31	5.53	0.661 CSH, J
10/07/99	1.33	0.184 J	0.184 J, Dup	4.52	0.579
02/01/00	NS	NS	NS	NS	NS
05/23/00	0.204 J	0.15 U, CSH	0.15 U	0.587	0.4 U
10/13/00	0.579	0.15 U	0.15 U	2.19	0.491
05/09/01	0.285 J	0.15 U	0.16 J	1.49	0.598 J
10/18/01	0.38 U	0.38 U	0.26 U	0.767	0.616 J
04/22/02	0.36 U	0.39 U	0.32 U	1.46	0.561 J

Date	MW-33A				
	L1 - DCA	L1 - DCE	PCE	L1,1 - TCA	TCE
	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
04/16/99	0.20 U	0.20 U	0.20 U	0.366 J	0.36 U
10/07/99	0.15 U	0.15 U	0.15 U	0.359 J	0.10 U
02/01/00	NS	NS	NS	NS	NS
05/23/00	0.15 U	0.15 U, CSH	0.15 U	0.152 J	0.4 U
10/13/00	0.15 U	0.15 U	0.15 U	0.294 J	0.1 U
05/09/01	0.15 U	0.15 U	0.15 U	0.15 U	0.459 J
10/18/01	0.38 U	0.38 U	0.26 U	0.207 J	0.26 U
04/22/02	0.36 U	0.39 U	0.32 U	0.42 U	0.36 U

Date	MW-33B				
	L1 - DCA	L1 - DCE	PCE	L1,1 - TCA	TCE
	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
04/16/99	5.57	0.772	0.443 J	9.81	0.716 CSH, J
10/07/99	3.06	0.484 J	0.326 J, Dup	8.49	0.680
02/01/00	NS	NS	NS	NS	NS
05/23/00	0.481 J	0.15 U, CSH	0.15 U	0.55	0.4 U
10/13/00	0.601	0.15 U	0.15 U	1.11	0.416
05/09/01	0.15 U	0.15 U	0.15 U	0.214 J	0.4 U
10/18/01	1.34	0.38 U	0.27 J	2.61	0.597 J
04/22/02	3.07	0.392 J	0.32 U	4.42	0.753 J

Table 9 Continued . . .

Date	MW-63A				
	L1 - DCA	L1 - DCE	PCE	LL1 - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
10/21/97	3.94	0.5 U	0.6 U	10.1	0.4 U
01/27/98	2.19	0.20 U	0.266	6.29	0.36 U
04/20/98	0.20 U	0.20 U	0.225	0.20 U	0.36 U
07/21/98	16.0	0.20 U	1.77	22.9	0.36 U
10/26/98	7.29	0.20 U	1.07	16.2	0.36 U
01/19/99	2.58	0.20 U	0.651 J	12.1	0.36 U
04/14/99	0.528 J	0.20 U	0.316 J	6.10	0.36 U
07/27/99	0.10 U	0.15 U	0.182 J	1.73	0.40 U
10/06/99	0.15 U	0.15 U	0.15 U	0.377 J	0.10 U
02/01/00	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U
05/25/00	0.15 U	0.15 U, CSH	0.15 U	0.15 U	0.4 U
07/17/00	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U
10/10/00	0.15 U, SPH	0.15 U	0.15 U	0.15 U	0.4 U
01/23/01	0.15 U	0.15 U	0.15 U	0.15 U, SPH	0.4 U, SPH
05/08/01	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U, CSL
07/16/01	0.38 U	0.38 U	0.26 U	0.2 J	0.26 U, CSH
10/16/01	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U
01/08/02	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U
04/22/02	0.36 U	0.39 U	0.32 U	0.42 U	0.36 U

Date	MW-64B				
	L1 - DCA	L1 - DCE	PCE	LL1 - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
10/22/97	0.4 U	0.5 U	0.6 U	0.7 U	2.23
01/27/98	NS	NS	NS	NS	NS
04/21/98	0.20 U	0.20 U	0.20 U	0.20 U	0.566
07/21/98	NS	NS	NS	NS	NS
10/26/98	0.20 U	0.20 U	0.20 U	0.20 U	1.47
01/19/99	NS	NS	NS	NS	NS
04/13/99	0.20 U	0.20 U	0.20 U	0.20 U	1.59
07/27/99	NS	NS	NS	NS	NS
10/05/99	0.15 U	0.15 U	0.15 U	0.15 U	1.55
02/01/00	NS	NS	NS	NS	NS
05/25/00	0.15 U	0.15 U, CSH	0.15 U	0.15 U	0.4 U
10/10/00	0.15 U, SPH	0.15 U	0.15 U	0.15 U	0.41 J
05/08/01	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U
10/16/01	0.38 U	0.38 U	0.26 U	0.2 U	0.843 J
04/22/02	0.36 U	0.39 U	0.32 U	0.42 U	0.937 J

Table 9 Continued . . .

Date	MW-64C				
	LI - DCA	LI - DCE	PCE	LI - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
10/22/97	0.4 U	0.5 U	0.6 U	0.7 U	1.84
01/27/98	NS	NS	NS	NS	NS
04/21/98	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U
07/21/98	NS	NS	NS	NS	NS
10/26/98	0.20 U	0.20 U	0.20 U	0.20 U	1.39
01/19/99	NS	NS	NS	NS	NS
04/13/99	0.20 U	0.20 U	0.20 U	0.20 U	1.18 J
07/27/99	NS	NS	NS	NS	NS
10/05/99	0.15 U	0.15 U	0.15 U	0.15 U	1.35
02/01/00	NS	NS	NS	NS	NS
05/25/00	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U
10/10/00	0.15 U, SPH	0.15 U	0.15 U	0.15 U	0.716 J
05/08/01	0.15 U	0.15 U	0.15 U	0.15 U	0.642 J
10/16/01	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U
04/22/02	0.36 U	0.39 U	0.32 U	0.42 U	0.642 J

Date	MW-65B				
	LI - DCA	LI - DCE	PCE	LI - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
10/22/97	NS	NS	NS	NS	NS
01/27/98	NS	NS	NS	NS	NS
04/21/98	0.20 U	0.20 U	0.20 U	0.20 U	0.934
07/21/98	NS	NS	NS	NS	NS
10/26/98	NS	NS	NS	NS	NS
01/19/99	NS	NS	NS	NS	NS
04/13/99	NS	NS	NS	NS	NS
07/27/99	0.10 U	0.15 U	0.15 U	0.20 U	0.669 J
10/05/99	NS	NS	NS	NS	NS
02/01/00	NS	NS	NS	NS	NS
05/25/00	NS	NS	NS	NS	NS
07/18/00	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U
10/10/00	NS	NS	NS	NS	NS
07/16/01	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U, CSH

Table 9 Continued . . .

Date	MW-65C				
	L1 - DCA	L1 - DCE	PCE	L1,1 - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
10/22/97	NS	NS	NS	NS	NS
01/27/98	NS	NS	NS	NS	NS
04/21/98	0.20 U	0.20 U	0.20 U	0.20 U	0.546
07/21/98	NS	NS	NS	NS	NS
10/26/98	NS	NS	NS	NS	NS
01/19/99	NS	NS	NS	NS	NS
04/13/99	NS	NS	NS	NS	NS
07/27/99	0.10 U	0.15 U	0.15 U	0.20 U	1.57
10/05/99	NS	NS	NS	NS	NS
02/01/00	NS	NS	NS	NS	NS
05/25/00	NS	NS	NS	NS	NS
07/18/00	0.15 U	0.15 U	0.15 U	0.15 U	0.597 J
10/10/00	NS	NS	NS	NS	NS
07/16/01	0.38 U	0.38 U	0.26 U	0.2 U	1.20 CSH

Date	MW-66A				
	L1 - DCA	L1 - DCE	PCE	L1,1 - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
10/21/97	1.75	0.5 U	0.6 U	18.6	0.485
01/27/98	1.61	0.20 U	0.20 U	18.5	0.458
04/20/98	1.39	0.20 U	0.20 U	18.9	0.529
07/21/98	1.30	0.20 U	0.20 U	13.1	0.461
10/26/98	1.28	0.20 U	0.20 U	12.7	0.378
01/19/99	1.17	0.20 U	0.206 J	12.2	0.462 J
04/13/99	1.17	0.20 U	0.20 U	12.2	0.407 J
07/27/99	1.07	0.167 J	0.15 U	10.2	0.40 U
10/05/99	1.09	0.175 J	0.15 U	10.8	0.429
02/01/00	0.348 J	0.15 U	0.15 U, CSL	4.21	0.4 U
05/25/00	0.15 U	0.15 U, CSH	0.15 U	1.45	0.4 U
07/17/00	0.15 U	0.15 U	0.15 U	1.08	0.4 U
10/10/00	0.15 U, SPH	0.15 U	0.15 U	1.64	0.4 U
01/23/01	0.15 U	0.15 U	0.15 U	0.293 J, SPH	0.4 U, SPH
05/08/01	0.15 U	0.15 U	0.15 U	0.387 J	0.4 U
07/16/01	0.38 U	0.38 U	0.26 U	0.366 J	0.26 U, CSH
10/16/01	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U
01/08/02	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U
04/22/02	0.36 U	0.39 U	0.32 U	0.42 U	0.36 U

Table 9 Continued . . .

Date	MW-66A PUMP				
	LI - DCA	LI - DCE	PCE	LLI - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
10/21/97	NS	NS	NS	NS	NS
01/27/98	NS	NS	NS	NS	NS
04/20/98	NS	NS	NS	NS	NS
07/21/98	NS	NS	NS	NS	NS
10/26/98	NS	NS	NS	NS	NS
01/19/99	NS	NS	NS	NS	NS
04/13/99	NS	NS	NS	NS	NS
07/27/99	NS	NS	NS	NS	NS
10/05/99	NS	NS	NS	NS	NS
02/01/00	0.284 J	0.15 U	0.151 J, CSL	3.41	0.4 U
07/17/00	NS	NS	NS	NS	NS
10/10/00	NS	NS	NS	NS	NS

Date	MW-66B				
	LI - DCA	LI - DCE	PCE	LLI - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
10/21/97	0.4 U	0.5 U	0.6 U	0.894	0.4 U
01/27/98	NS	NS	NS	NS	NS
04/20/98	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U
07/21/98	NS	NS	NS	NS	NS
10/26/98	0.20 U	0.20 U	0.20 U	0.681	0.36 U
01/19/99	NS	NS	NS	NS	NS
04/13/99	0.20	0.20	0.272 J	0.81	0.474 J
07/27/99	NS	NS	NS	NS	NS
10/05/99	0.307 J	0.15 U	0.256 J	0.837	0.774
02/01/00	NS	NS	NS	NS	NS
05/25/00	0.15 U	0.15 U, CSH	0.15 U	0.15 U	0.4 U
07/17/00	NS	NS	NS	NS	NS
10/10/00	0.15 U, SPH	0.15 U	0.245 J	0.319 J	0.4 U
05/08/01	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U
10/16/01	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U
04/22/02	0.36 U	0.39 U	0.32 U	0.42 U	0.362 J

Table 9 Continued . . .

NOTES:

ND = Not detected at or above the detection limit.

D = Indicates initial analysis exceeded the calibration range, was diluted and re-analyzed.

B = Compound detected in blank.

U = Compound not detected at or above this value, which is the detection limit.

NS = Not sampled.

Concentrations above the 140 PALs are shown in bold.

Concentrations above MCL/NR 140 ESs are shown in bold and shaded.

CSH = Check standard for this analyte exhibited a high bias. Sample results may also be biased high.

CSL = Check standard for this analyte exhibited a low bias. Sample results may also be biased low.

J = Estimated concentration below laboratory quantitation level.

SPH = Matrix spike recovery within analytical batch was high. Sample matrix appears similar to your sample; result may be biased high.

SPL = Matrix spike recovery within analytical batch was low. Sample matrix appears similar to your sample; result may be biased low.

Dup = Result of duplicate analysis in this quality assurance batch exceeds the limits for precision.

Pump = Sample collected directly from pump after completion of purging.

NATIONAL PRESTO INDUSTRIES, INC.
EAU CLAIRE, WISCONSIN

TABLE 10

ANALYTICAL RESULTS FOR MELBY ROAD EXTRACTION WELL SAMPLES (ug/l)

Date	EW - 1R				
	LI - DCA	LI - DCE	PCE	LI - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
08/13/97	1.34	ND	ND	4.6	ND
09/08/97	1.83	0.17 U	0.22 U	5.34	0.12 U
10/13/97	1.82	0.2 U	0.33	4.58	0.2 U
11/11/97	1.71	0.5 U	0.6 U	4.79	0.4 U
12/04/97	1.84	0.5 U	0.6 U	5.06	0.4 U
01/12/98	0.98	0.2 U	0.278	3.35	0.21 U
02/04/98	1.70	0.20 U	0.326	4.98	0.36 U
03/05/98	1.03	0.20 U	0.332	3.33	0.36 U
04/14/98	0.923	0.20 U	0.243	2.66	0.36 U
05/04/98	1.44	0.20 U	0.20 U	4.38	0.36 U
06/02/98	0.906	0.20 U	0.233	3.09	0.36 U
07/22/98	(1)	(1)	(1)	(1)	(1)
08/05/98	(1)	(1)	(1)	(1)	(1)
09/14/98	2.00	0.20 U	0.385	4.51	0.36 U
10/07/98	2.08	0.20 U	0.452	5.07	0.36 U
11/11/98	0.20 U	0.20 U	0.376	4.12	0.36 U
Recovery wells are now sampled on a quarterly basis.					
02/02/99	1.25	0.20 U	0.398	2.88	0.36 U CSH
05/04/99	0.934	0.20 U	0.284 J	2.05	0.36 U CSH
08/16/99	0.827	0.20 U	0.333 J	1.68	0.40 U
11/17/99	0.617	0.15 U	0.222 J	1.30	0.121 J
02/08/00	0.308 J	0.15 U	0.2 J	0.685	0.40 U
05/09/00	0.279 J	0.15 U, CSL	0.16 J	0.678	0.40 U
08/21/00	0.237 J	0.15 U	0.15 U	0.374 J	0.40 U
11/15/00	0.15 U	0.15 U	0.15 U	0.307 J	0.40 U
02/13/01	0.15 U	0.15 U	0.15 U	0.225 J	0.40 U
05/01/01	0.15 U	0.15 U	0.154 J	0.15 U	0.40 U
08/14/01	0.38 U	0.38 U	0.26 U	0.20 U	0.803
11/26/01	0.38 U	0.38 U	0.26 U	0.20 U	0.26 U
02/18/02	0.38 U	0.38 U	0.26 U	0.20 U	0.26 U
05/07/02	0.36 U	0.39 U	0.32 U	0.42 U	0.36 U

Table 10 Continued . . .

Date	EW - 2				
	L1 - DCA	L1 - DCE	PCE	L11 - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
08/13/97	6.99	ND	0.46	11.4	ND
09/08/97	6.76	0.17 U	0.45	10.20	0.12 U
10/13/97	5.51	0.2 U	0.588	8.33	0.2 U
11/11/97	5.85	0.5 U	0.641	9.27	0.4 U
12/04/97	6.39	0.5 U	0.69	10.1	0.4 U
01/12/98	4.62	0.2 U	0.552	7.17	0.21 U
02/04/98	6.31	0.20 U	0.659	10.5	0.36 U
03/05/98	4.11	0.20 U	0.570	6.81	0.36 U
04/14/98	3.89	0.20 U	0.473	6.21	0.36 U
05/04/98	5.53	0.20 U	0.476	9.06	0.36 U
06/02/98	4.20	0.20 U	0.548	6.99	0.36 U
07/22/98	(1)	(1)	(1)	(1)	(1)
08/05/98	(1)	(1)	(1)	(1)	(1)
09/14/98	5.53	0.20 U	0.688	8.46	0.36 U
10/07/98	6.41	0.20 U	0.814	9.38	0.36 U
11/11/98	5.26	0.20 U	0.611	7.26	0.36 U
Recovery wells are now sampled on a quarterly basis.					
02/02/99	3.42	0.20 U	0.496 J	5.60	0.36 U CSH
05/04/99	1.66	0.20 U	0.246 J	3.29	0.36 U
08/16/99	0.559	0.20 U	0.159 J	1.48	0.40 U
11/17/99	0.188 J	0.15 U	0.15 U	0.682	0.40 U
02/08/00	0.15 U	0.15 U	0.15 U	0.257 J	0.40 U
05/09/00	0.15 U	0.15 U, CSL	0.15 U	0.247 J	0.40 U
08/21/00	0.15 U	0.15 U	0.15 U	0.15 U	0.40 U
11/15/00	0.15 U	0.15 U	0.15 U	0.15 U	0.40 U
02/13/01	0.15 U	0.15 U	0.15 U	0.15 U	0.40 U
05/01/01	0.15 U	0.15 U	0.15 U	0.15 U	0.40 U
08/14/01	0.38 U	0.38 U	0.26 U	0.20 U	0.837 J
11/26/01	0.38 U	0.38 U	0.26 U	0.20 U	0.26 U
02/18/02	0.38 U	0.38 U	0.26 U	0.20 U	0.26 U
05/07/02	0.36 U	0.39 U	0.32 U	0.42 U	0.36 U

NOTES:

ND = Not detected at or above the detection limit.

NS = Not sampled.

U = Compound not detected at or above this value, which is the detection limit.

J = Estimated concentration below laboratory quantitation level.

CSH = Check standard exhibited a high bias. Reported value may also be biased high.

CSL = Check standard for this analyte exhibited a low bias. Sample results may also be biased low.

FOOTNOTE:

(1) EW-1R and EW-2 were shut down June 4 due to construction at the Melby Road site and restarted the week of August 10.

TABLE 11

**ANALYTICAL RESULTS FOR EAST DISPOSAL SITE
MONITORING WELL SAMPLES (PLUME 5) (µg/L)**

		MV-7				
Date	I, I - DCA	I, I - DCE	PCE	I, I, I - TCA	TCE	
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5	
04/14/99	0.20 U	0.20 U	0.20 U	0.339 U	0.36 U	
07/26/99	0.1 U	0.15 U	0.15 U	0.20 U	0.40 U	
10/05/99	0.15 U	0.15 U	0.15 U	0.15 U	0.10 U	
02/22/00	0.15 U	0.15 U, CSH	0.15 U	0.15 U	0.40 U	
10/10/00	0.15 U, CSH	0.15 U	0.15 U	0.15 U	0.40 U	
05/07/01	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U	
10/16/01	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U	
04/22/02	0.36 U	0.39 U	0.32 U	0.42 U	0.36 U	

MW-17B										
Date	1,1-DCA	1,1-DCE	PCE	1,1,1 - TCA	TCE	Ethylbenzene	Dissolved Cadmium	cis-1,2-DCE	Toluene	Naphthalene
MCL/ES/PAL Limitations	None/850/95	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5	700/700/140	5/5/0.5	70/70/7	1000/313/68.6	None/40/8
09/17/98	0.20 U	0.20 U	0.20 U	0.20 U	0.447 J	0.731 J, MB	3.22	0.217	0.239	0.453 MB
04/13/99	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U	NA	NA	NA	0.20 U	NA
10/05/99	0.15 U	0.15 U	0.15 U	0.15 U	0.398	NA	NA	NA	0.40 U	NA
06/06/00	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U	NA	NA	NA	0.4 U	NA
10/11/00	0.15 U, SPH	0.15 U	0.15 U	0.15 U	0.4 U	NA	NA	0.15 U	0.4 U	NA
05/07/01	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U	NA	NA	NA	NA	NA
10/15/01	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U	NA	NA	NA	0.4 U	NA
04/22/02	0.36 U	0.39 U	0.32 U	0.42 U	0.36 U	NA	NA	NA	0.3 U	NA

Table 11 Continued . . .

MW-17C									
Date	1,1-DCA	1,1-DCE	PCE	1,1,1 - TCA	TCE	Ethylbenzene	Dissolved Cadmium	Chloroethane	Methylene Chloride
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/50.5	200/200/40	5/50.5	700/700/140	5/50.5	None/400/80	None/5/0.5
09/17/98	0.20 U	0.20 U	0.20 U	0.22 U	0.36 U	0.471 J, MB	1.18	0.453	0.697 J, MB
04/13/99	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U	NA	NA	NA	0.39
10/05/99	0.15 U	0.15 U	0.15 U	0.15 U	0.10 U	NA	NA	NA	0.50 U
06/06/00	0.15 U	0.15 U, CSH	0.15 U	0.15 U	0.4 U	NA	NA	NA	0.39 CSH
10/11/00	0.15 U, SPH	0.15 U	0.15 U	0.15 U	0.4 U	NA	NA	NA	0.39 U
05/07/01	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U	NA	NA	NA	NA
10/15/01	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U	NA	NA	NA	NA
04/22/02	0.36 U	0.39 U	0.32 U	0.42 U	0.36 U	NA	NA	NA	0.51 U

		MW-19			
Date	1,1-DCA	1,1-DCE	PCE	1,1,1 - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
04/16/99	0.20 U	0.20 U	0.20 U	0.20 U	0.794 J, CSH
10/05/99	0.15 U	0.15 U	0.15 U	0.15 U	0.901
10/10/00	0.15 U, SPH	0.15 U	0.15 U	0.15 U	0.4 U
05/07/01	0.15 U	0.15 U	0.15 U	0.15 U	0.431 J
10/16/01	0.38 U	0.38 U	0.26 U	0.2 U	0.499 J
04/22/02	0.36 U	0.39 U	0.32 U	0.42 U	0.36 U

Table 11 Continued . . .

Date	MW-72							cls-1,2-DCE
	1,1-DCA	1,1-DCE	PCE	1,1,1-TCA	TCE	Ethylbenzene	Dissolved Cadmium	
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5	700/700/140	5/5/0.5	70/70/7
09/17/98	0.203	0.20 U	0.20 U	0.565	5.30	0.507 MB	0.407	5.85
10/28/98	0.20 U	0.20 U	0.216 J	0.538 J	3.55	NA	NA	NA
01/19/99	0.20 U	0.20 U	0.237 J	0.565 J	3.85	NA	NA	NA
04/13/99	0.20 U	0.20 U	0.285 J	0.479 J	3.12 CSH	NA	NA	NA
07/26/99	0.166 J	0.15 U	0.223 J	0.450 J	3.04	NA	NA	NA
10/05/99	0.183 J	0.15 U	0.183 J	0.531	3.340	NA	NA	NA
02/01/00	0.15 U	0.15 U	0.214 J	0.301 J	1.99	NA	NA	NA
05/22/00	0.15 U	0.15 U, CSH	0.15 U	0.17 J	1.20 J	NA	NA	NA
07/17/00	0.15 U	0.15 U	0.15 U	0.15 U	1.03 J	NA	NA	NA
10/10/00	0.15 U, SPH	0.15 U	0.15 U	0.15 U	0.4 U	NA	NA	0.842
01/23/01	0.15 U	0.15 U	0.15 U	0.15 U, SPH	1.06 J, SPH	NA	NA	NA
05/07/01	0.15 U	0.15 U	0.15 U	0.15 U	1.08 J	NA	NA	NA
07/16/01	0.38 U	0.38 U	0.26 U	0.2 U	1.40 CSH	NA	NA	NA
10/15/01	0.38 U	0.38 U	0.26 U	0.2 U	1.92	NA	NA	NA
01/08/02	0.38 U	0.38 U	0.26 U	0.2 U	1.04	NA	NA	NA
04/22/02	0.36 U	0.39 U	0.32 U	0.42 U	1.40	NA	NA	NA

Date	MW-72 PUMP				TCE
	1,1-DCA	1,1-DCE	PCE	1,1,1-TCA	
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
02/01/00	0.15 U	0.15 U	0.209 J	0.323 J	1.96

Table 11 Continued . . .

MW-73								
Date	1,1 - DCA	1,1-DCE	PCE	1,1,1 - TCA	TCE	Ethylbenzene	Dissolved Cadmium	cis-1,2-DCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5	700/700/140	5/5/0.5	70/70/7
09/17/98	0.20 U	0.20 U	0.20 U	0.242 J	0.632	0.525 MB	0.20 U	2.99
10/28/98	0.20 U	0.20 U	0.20 U	0.307 J	0.763	NA	NA	NA
01/19/99	0.20 U	0.20 U	0.20 U	0.232 J	0.414 J	NA	NA	NA
04/13/99	0.20 U	0.20 U	0.20 U	0.337 J	0.616 J, CSH	NA	NA	NA
07/26/99	0.157 J	0.15 U	0.15 U	0.242 J	0.836 J	NA	NA	NA
10/05/99	0.15 U	0.15 U	0.15 U	0.15 U	0.510	NA	NA	NA
02/01/00	0.262 J	0.15 U	0.16 J	0.377 J	1.48	NA	NA	NA
05/22/00	0.475 J	0.15 U, CSH	0.27 J	0.683	3.74	NA	NA	NA
07/17/00	0.174 J	0.15 U	0.151 J	0.291 J	1.34	NA	NA	NA
10/10/00	0.27 J, SPH	0.15 U	0.205 J	0.41 J	0.4 U	NA	NA	8.53
01/23/01	0.15 U	0.15 U	0.15 U	0.15 U, SPH	0.4 U, SPH	NA	NA	NA
05/07/01	0.15 U	0.15 U	0.161 J	0.15 U	0.455 J	NA	NA	NA
07/16/01	0.38 U	0.38 U	0.26 U	0.2 U	0.305 J, CSH	NA	NA	NA
10/15/01	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U	NA	NA	NA
01/08/02	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U	NA	NA	NA
04/22/02	0.36 U	0.39 U	0.32 U	0.42 U	0.36 U	NA	NA	NA

PW-67 (Joles)					
Date	1,1 - DCA	1,1 - DCE	PCE	1,1,1 - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
04/13/99	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U
10/05/99	0.15 U	0.15 U	0.15 U	0.15 U	0.109 J
05/24/00	0.15 U	0.15 U	0.15 U	0.15 U	0.40 U
10/11/00	0.15 U, CSH, SPH	0.15 U	0.15 U	0.15 U	0.40 U
05/08/01	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U
10/16/01	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U
04/22/02	0.36 U	0.39 U	0.32 U	0.42 U	0.36 U

Table 11 Continued . . .

Date	PW-218 (Martens)				
	L1 - DCA	L1 - DCE	PCE	L1,1 - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
04/13/99	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U
10/05/99	0.15 U	0.15 U	0.15 U	0.15 U	0.10 U
05/24/00	0.15 U	0.15 U	0.15 U	0.15 U	0.40 U
10/11/00	0.15 U, CSH, SPH	0.15 U	0.15 U	0.15 U	0.40 U
05/08/01	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U
10/16/01	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U
04/22/02	0.36 U	0.39 U	0.32 U	0.42 U	0.36 U

Date	PW-230 (Hlenfeld)				
	L1 - DCA	L1 - DCE	PCE	L1,1 - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
04/13/99	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U
10/05/99	0.15 U	0.15 U	0.15 U	0.15 U	0.10 U
05/24/00	0.15 U	0.15 U	0.15 U	0.15 U	0.40 U
10/11/00	0.15 U, CSH, SPH	0.15 U	0.15 U	0.15 U	0.40 U
05/08/01	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U
10/16/01	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U

NOTES:

Only compounds detected in one or more sampling rounds are shown for each well. When nothing has ever been detected in a well, only the five VOCs of concern are shown.

NA = Not analyzed.

U = Compound not detected at or above this value, which is the detection limit.

Concentrations above NR 140 PALs are shown in bold.

Concentrations above the MCL/NR 140 ES are shown in bold and shaded.

MB = Analyte observed in method blank. Sample results may be biased high.

LBC = Analyte is a common laboratory solvent or chemical. Positive identification may be due to laboratory contamination.

J = Estimated concentration below laboratory quantitation level.

CSH = Check standard for this analyte exhibited a high bias. Sample results may also be biased high.

SPH = Matrix spike recovery within analytical batch was high. Sample matrix appears similar to your sample; result may be biased high.

Pump = Sample collected directly from pump after completion of purging.

NATIONAL PRESTO INDUSTRIES, INC.
EAU CLAIRE, WISCONSIN

TABLE 13

TCE CONCENTRATIONS IN EXTRACTION WELLS, DISCHARGE (EFFLUENT) FROM CASCADE AERATORS, AND MANHOLE MH-18

Date	Melby Road Extraction Wells & Cascade Aerator				SW Corner Extraction Wells & Cascade Aerator				Manhole MH-18 Concentration (µg/l)
	Concentration (µg/l)			Percent Removal	Concentration (µg/l)			Percent Removal	
	FW-1R	EW-2	CAS-1		EW-3	EW-4	CAS-2		
08/13/97	0.12 U	0.12 U	0.12 U	N	5.37	1.18	1.18	41	0.3
09/08/97	0.12 U	0.12 U	0.12 U	N	6.15	1.74	1.41	45	0.46
10/13/97	0.2 U	0.2 U	0.2 U	N	7.41	1.72	1.76	36	0.772
11/11/97	0.4 U	0.4 U	0.4 U	N	8.96	1.89	2.18	34	0.986
12/04/97	0.4 U	0.4 U	0.4 U	N	9.20	1.92	2.09	38	1.03
01/12/98	0.21 U	0.21 U	0.21 U	N	5.37	1.14	1.17	42	0.484
02/04/98	0.36 U	0.36 U	0.36 U	N	8.11	1.94	1.68	45	0.753
03/05/98	0.36 U	0.36 U	0.36 U	N	4.86	1.29	1.08	44	0.450
04/14/98	0.36 U	0.36 U	0.36 U	N	4.04	1.21	0.834	50	0.36 U
05/04/98	0.36 U	0.36 U	0.36 U	N	5.21	2.02	1.30	49	0.554
06/02/98 ⁽¹⁾	0.36 U	0.36 U	0.36 U	N	3.17	0.88	0.88	34	0.392
07/22/98 ⁽¹⁾	NS ⁽²⁾	NS ⁽²⁾	NS ⁽²⁾	NS ⁽²⁾	6.18	1.30	1.50	37	1.28
08/05/98 ⁽¹⁾	NS	NS	NS	NS	4.89	1.35	1.41	34	1.04
09/14/98	0.36 U	0.36 U	0.36 U	N	3.27	1.42	1.17	36	0.854
10/07/98	0.36 U	0.36 U	0.36 U	N	2.67	1.39	1.05	37	0.492
11/11/98	0.36 U	0.36 U	0.36 U	N	2.31	1.46	0.936	43	0.471
02/09/99	0.36 U	0.36 U	0.36 U	N	2.21	1.60	1.14	34	0.498
05/04/99	0.36 U	0.36 U	0.36 U	N	1.83 CSH	1.47 CSH	0.923 J CSH	41	0.409
08/16/99	0.40 U	0.40 U	0.40 U	N	2.87	1.33	1.03	39	0.487
11/17/99	0.121 J	0.40 U	0.40 U	N	3.370	1.50	1.13	41	0.382
02/08/00	0.4 U	0.4 U	0.4 U	N	2.04	1.27	0.845 J	42	0.4 U
05/09/00	0.4 U	0.4 U	0.4 U	N	2.07	1.48	0.732 J	54	0.4 U
08/21/00	0.4 U	0.4 U	0.4 U	N	3.01	1.31 J	0.996 J	41	0.441
11/15/00	0.4 U	0.4 U	0.4 U	N	3.75	1.43	1.15 J	43	0.511
02/13/01	0.4 U	0.4 U	0.4 U	N	3.90	1.34	1.10	45	0.539
05/01/01	0.4 U	0.4 U	0.4 U	N	3.62	1.95	1.44	40	0.562
08/14/01	0.803	0.837	0.667	19	4.78	2.29	2.35	21	1.28
11/26/01	0.26 U	0.26 U	0.26 U	N	3.36	0.962	0.872	49	0.26 U
02/18/02	0.26 U	0.26 U	0.26 U	N	3.15	1.48	1.20	40	0.524
05/07/02	0.36 U	0.36 U	0.36 U	N	2.96	1.82	1.07	51	0.385

NOTES:

The NR 140 PAL for TCE is 0.5 µg/l; detected concentrations exceeding the PAL are bold.

The MCL/NR 140 ES for TCE is 5 µg/l; detected concentrations exceeding the MCL/ES are shaded.

Percent removal calculated based on flow weighted averages of the extraction wells.

CSH = Check standard for this analyte exhibited a high bias. Sample results may also be biased high.

J = Estimated concentration below laboratory quantitation level.

N = Not calculated because influent and/or effluent concentration was below the detection limit.

NS = Not sampled.

U = Compound not detected at or above this value, which is the detection limit.

FOOTNOTES:

(1) EW-1R and E-2 were shut down 06/04/98 due to construction at the Melby Road Site and restarted 08/11/98.

EW-3 and E-4 were shut down 06/04/98 due to excavation at Dry Well #2 and restarted 07/15 and 07/20/98, respectively.

(2) EW-1R and EW-2 did not operate in July 1998.

NATIONAL PRESTO INDUSTRIES, INC.
EAU CLAIRE, WISCONSIN

TABLE 14

1,1,1-TCA CONCENTRATIONS IN EXTRACTION WELLS, DISCHARGE FROM CASCADE AERATORS, & MANHOLE MH-18

Date	Melby Road Extraction Wells & Cascade Aerator				SW Corner Extraction Wells & Cascade Aerator				Manhole MH-18 Concentration (µg/l)
	Concentration (µg/l)			Percent Removal	Concentration (µg/l)			Percent Removal	
	EW-1R	EW-2	CAS-1		EW-3	EW-4	CAS-2		
08/13/97	4.6	11.4	4.15	46	7.98	20.9	11.2	39	6.7
09/08/97	5.34	10.20	4.21	44	7.80	24.2	10.9	48	5.83
10/13/97	4.58	8.33	4.62	26	6.84	15.6	8.17	42	5.53
11/11/97	4.79	9.27	4.32	36	7.06	16.3	8.79	39	5.79
12/04/97	5.06	10.01	4.16	43	7.23	16.4	7.92	46	5.54
01/12/98	3.35	7.17	1.90	62	3.96	10.6	4.73	49	3.40
02/04/98	4.98	10.50	4.44	40	6.28	15.7	7.57	46	5.03
03/05/98	3.33	6.81	3.25	33	3.58	11.2	5.17	48	3.51
04/14/98	2.66	6.21	2.31	46	2.77	11.1	4.74	51	3.27
05/04/98	4.38	9.06	3.54	45	3.45	15.9	7.48	46	5.25
06/02/98 ⁽¹⁾	3.09	6.99	2.63	46	2.08	9.79	5.17	37	3.84
07/22/98 ⁽¹⁾	NS ⁽²⁾	NS ⁽²⁾	NS ⁽²⁾	NS ⁽²⁾	2.30	10.50	4.82	45	4.02
08/05/98	NS	NS	NS	NS	2.66	11.40	6.08	36	4.15
09/14/98	4.51	8.46	4.17	35	2.09	11.10	5.12	43	3.65
10/07/98	5.07	9.38	4.01	43	1.82	10.5	4.96	42	3.37
11/11/98	4.12	7.26	3.00	46	1.68	10.0	4.30	47	0.20 U
02/09/99	2.88	5.60	2.34	44	1.36	10.1	4.71	42	2.64
05/04/99	2.05	3.29	1.56	24	0.917	10.0	4.24	45	1.56
08/16/99	1.68	1.48	0.934	41	0.899	9.87	4.24	45	2.18
11/17/99	1.30	0.682	0.716	29	0.960	10.8	4.26	50	1.89
02/08/00	0.685	0.257 J	0.302 J	37	0.477 J	7.71	3.38	44	1.28
05/09/00	0.678	0.247 J	0.272 J	42	0.545	8.65	3.14	55	1.48
08/21/00	0.374 J	0.15 U	0.15 U	N	0.712	8.14	3.62	44	1.38
11/15/00	0.307 J	0.15 U	0.15 U	N	0.558	8.04	2.95	52	1.25
02/13/01	0.225 J	0.15 U	0.15 U	N	0.584	7.10	2.96	45	1.31
05/01/01	0.15 U	0.15 U	0.15 U	N	1.84	6.29	2.38	49	0.561
08/14/01	0.2 U	0.2 U	0.2 U	N	0.583	6.01	2.45	46	0.885
11/26/01	0.2 U	0.2 U	0.2 U	N	0.265 J	5.84	1.87	55	0.562
02/18/02	0.2 U	0.2 U	0.2 U	N	0.2 U	6.39	1.72	61	0.262
05/07/02	0.42 U	0.42 U	0.42 U	N	0.433	8.05	3.14	44	1.13

NOTES:

Percent removal calculated based on flow weighted averages of the extraction wells.

J = Estimated concentration below laboratory quantitation level.

N = Not calculated because influent and/or effluent concentration was below the detection limit.

NS = Not sampled.

U = Compound not detected at or above this value, which is the detection limit.

FOOTNOTES:

(1) EW-1R and E-2 were shut down 06/04/98 due to construction at the Melby Road Site and restarted 08/11/98.

EW-3 and E-4 were shut down 06/04/98 due to excavation at Dry Well #2 and restarted 07/15 and 07/20/98, respectively.

(2) EW-1R and EW-2 did not operate in July 1998.

NATIONAL PRESTO INDUSTRIES, INC.
EAU CLAIRE, WISCONSIN

TABLE 15

ANALYTICAL RESULTS FOR LAKE HALLIE MONITORING WELL SAMPLES (ug/l)

Date	LH-1							
	1,1-DCA	1,1-DCE	PCE	1,1,1-TCA	TCE	Toluene	o-Xylene & Styrene	m- & p-Xylene
04/14/99	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U, CSH	1.17	0.395 J, CSH	1.09
10/04/99	0.15 U	0.15 U	0.15 U	0.187 J	0.10 U	0.40 U	0.15 U	0.40 U

Date	LH-2							
	1,1-DCA	1,1-DCE	PCE	1,1,1-TCA	TCE	Toluene	o-Xylene & Styrene	m- & p-Xylene
04/14/99	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U, CSH	1.05	0.318 J, CSH	0.841
10/04/99	0.15 U	0.15 U	0.15 U	0.15 U	0.10 U	0.40 U	0.15 U	0.40 U

Date	LH-3							
	1,1-DCA	1,1-DCE	PCE	1,1,1-TCA	TCE	Toluene	o-Xylene & Styrene	m- & p-Xylene
04/14/99	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U, CSH	1.11	0.289 J, CSH	0.813
10/04/99	0.15 U	0.15 U	0.15 U	0.151 J	0.10 U	0.40 U	0.15 U	0.40 U

Date	LH-4							
	1,1-DCA	1,1-DCE	PCE	1,1,1-TCA	TCE	Toluene	o-Xylene & Styrene	m- & p-Xylene
04/14/99	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U, CSH	0.611 J	0.20 U	0.467 J
10/04/99	0.15 U	0.15 U	0.15 U	0.15 U	0.10 U	0.40 U	0.15 U	0.40 U

Date	LH-5							
	1,1-DCA	1,1-DCE	PCE	1,1,1-TCA	TCE	Toluene	o-Xylene & Styrene	m- & p-Xylene
04/14/99	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U, CSH	0.561 J	0.20 U	0.34 J
10/04/99	0.15 U	0.15 U	0.15 U	0.15 U	0.10 U	0.40 U	0.15 U	0.40 U

Date	LH-6							
	1,1-DCA	1,1-DCE	PCE	1,1,1-TCA	TCE	Toluene	o-Xylene & Styrene	m- & p-Xylene
04/14/99	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U, CSH	1.02	0.20 U, CSH	0.530 J
10/04/99	0.15 U	0.15 U	0.15 U	0.15 U	0.10 U	0.40 U	0.15 U	0.40 U

Date	LH-7							
	1,1-DCA	1,1-DCE	PCE	1,1,1-TCA	TCE	Toluene	o-Xylene & Styrene	m- & p-Xylene
04/14/99	0.2 U, CSH	0.20 U	0.20 U	0.20 U	0.36 U, CSH	0.423 J	0.20 U	0.323 J
10/04/99	0.15 U	0.15 U	0.15 U	0.253 J	0.10 U	0.40 U	0.15 U	0.40 U

Date	LH-8							
	1,1-DCA	1,1-DCE	PCE	1,1,1-TCA	TCE	Toluene	o-Xylene & Styrene	m- & p-Xylene
04/14/99	0.2 U, CSH	0.20 U	0.20 U	0.20 U	0.455 J, SPH	0.475 J	0.20 U	0.348 J
10/04/99	0.15 U	0.15 U	0.15 U	0.15 U	0.10 U	0.40 U	0.15 U	0.40 U

Table 15 Continued . . .

Date	LH-9							
	I, I - DCA	I, I - DCE	PCE	I, I, I - TCA	TCE	Toluene	o-Xylene & Styrene	m- & p-Xylene
04/14/99	0.2 U, CSH	0.20 U	0.20 U	0.20 U	0.36 U, CSH	0.415 J	0.20 U	0.23 J
10/04/99	0.15 U	0.15 U	0.15 U	0.15 U	0.10 U	0.40 U	0.15 U	0.40 U

Date	LH-10							
	I, I - DCA	I, I - DCE	PCE	I, I, I - TCA	TCE	Toluene	o-Xylene & Styrene	m- & p-Xylene
04/14/99	0.2 U, CSH	0.20 U	0.20 U	0.20 U	0.36 U, SPH	0.564 J	0.20 U	0.319 J
10/04/99	0.15 U	0.15 U	0.15 U	0.15 U	0.10 U	0.40 U	0.15 U	0.40 U

Date	LH-11							
	I, I - DCA	I, I - DCE	PCE	I, I, I - TCA	TCE	Toluene	o-Xylene & Styrene	m- & p-Xylene
04/14/99	0.2 U, CSH	0.20 U	0.20 U	0.20 U	0.36 U, SPH	0.637 J	0.20 U	0.408 J
10/04/99	0.15 U	0.15 U	0.15 U	0.15 U	0.10 U	0.40 U	0.15 U	0.40 U

Date	LH-12							
	I, I - DCA	I, I - DCE	PCE	I, I, I - TCA	TCE	Toluene	o-Xylene & Styrene	m- & p-Xylene
04/14/99	0.2 U, CSH	0.20 U	0.20 U	0.20 U	0.36 U, SPH	0.500 J	0.20 U	0.280 J
10/04/99	0.15 U	0.15 U	0.15 U	0.15 U	0.10 U	0.40 U	0.15 U	0.40 U

NOTES:

U = Compound not detected at or above this value, which is the detection limit.

J = Estimated concentration below laboratory quantitation level.

CSH = Check standard for this analyte exhibited a high bias. Sample results may also be biased high

SPH = Matrix spike recovery within analytical batch was high. Sample matrix appears similar to your sample; result may be biased high.

NATIONAL PRESTO INDUSTRIES, INC.
EAU CLAIRE, WISCONSIN

TABLE 16

CITY OF EAU CLAIRE MONITORING WELL DATA

Date	EC-1				
	L1 - DCA	L1 - DCE	PCE	L1,1 - TCA	TCE
	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
MCL/ES/PAL Limitations					
10/15/85	NA	NA	NA	NA	11.0
12/18/91	2.0	0.9	0.2 J	21	7.0
06/15/92	NA	NA	NA	NA	7.0
06/20/92	NA	NA	NA	NA	7.0
05/11/95	0.5 U	0.5 U	0.7 U	0.8 U	0.6 U
06/15/95	NA	NA	NA	NA	5.0
04/30/96	1.6	0.4 U	0.4 U	0.4 U	1.4
10/04/96	1.5	0.3 U	0.2 U	0.2 U	1.5
05/05/97	1.4	0.3 U	0.2 U	0.4	1.2
10/09/97	1.4	0.3	0.2	1.0	2.2
05/01/98	1.1	0.3 U	0.2 U	0.5	4.5
11/06/98	1.2	0.5 U	0.7 U	0.6 U	1.8
04/20/99	0.930	0.20 U	0.20 U	0.355 J	1.58 CSH
05/20/99	0.8	0.5 U	0.7 U	0.7 U	1.2
09/13/99	1.4	0.5 U	0.7 U	0.7 U	1.2
10/08/99	1.47	0.15 U	0.15 U	0.982	3.07
05/23/00	0.356 J, ISH	0.15 U, ISH	0.178 J, ISH	0.15 U, ISH	0.59 J, MSH
10/13/00	0.213 J	0.15 U	0.15 U	0.301 J	1.27
05/10/01	379 J	0.15 U	0.15 U	1.30	2.72
10/17/01	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U
04/22/02	0.518 J	0.39 U	0.32 U	1.58	3.21

Date	EC-2				
	L1 - DCA	L1 - DCE	PCE	L1,1 - TCA	TCE
	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
MCL/ES/PAL Limitations					
10/15/85	NA	NA	NA	NA	13.0
12/19/91	2.0	0.9	0.3	19	8.0
06/15/92	NA	NA	NA	NA	8.0
06/20/92	NA	NA	NA	NA	8.0
05/11/95	3.0	0.9	1.8	9.9	5.6
06/15/95	NA	NA	NA	NA	5.0
04/30/96	1.4	0.4	0.5	7.8	4.6
10/04/96	1.3	0.3 U	0.2 U	9.4	5.4
05/05/97	1.3	0.3 U	0.2 U	7.6	5.0
10/09/97	1.2	0.7	0.4	8.5	5.4
05/01/98	1.2	0.5	0.3	8.4	8.0
11/06/98	1.2	0.5 U	0.7 U	5.9	5.7
04/20/99	0.947	0.285 J	0.235 J	6.03	5.08 CSH
05/20/99	1.0	0.5 U	0.7 U	6.8	4.9
09/13/99	1.3	0.5 U	0.7 U	5.3	4.0
10/08/99	1.18	0.296 J	0.199 J	5.54	5.40
05/24/00	0.819	0.203 J	0.188 J	3.28	4.43
10/13/00	0.782	0.165	0.225 J	3.74	5.03
05/10/01	0.216 J	0.15 U	0.16 J	1.53	3.05
10/17/01	0.38 U	0.38 U	0.26 U	0.878	3.40
04/22/02	0.36 U	0.39 U	0.32 U	1.49	4.02

Table 16 Continued . . .

Date	EC-3				
	LL - DCA	LL - DCE	PCE	LLI - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
05/11/95	0.5 U	0.5 U	0.7 U	0.8 U	0.6 U
04/30/96	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
10/04/96	0.2 U	0.3 U	0.2 U	1.6	2.6
05/05/97	0.2 U	0.3 U	0.2 U	0.3	0.2 U
10/09/97	0.2 U	0.2 U	0.2 U	0.3 U	0.2 U
05/01/98	0.2 U	0.3 U	0.2 U	0.2 U	0.2 U
11/06/98	0.2 U	0.5 U	0.7 U	0.6 U	0.6 U
04/19/99	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U, CSH
05/20/99	1.0 U	0.5 U	0.7 U	0.7 U	0.6 U
09/13/99	1.0 U	0.5 U	0.7 U	0.7 U	0.6 U
10/08/99	NS	NS	NS	NS	NS
05/23/00	NS	NS	NS	NS	NS
07/19/00	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U
07/18/01	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U
04/22/02	0.36 U	0.39 U	0.32 U	0.42 U	0.36 U

Date	EC-4				
	LL - DCA	LL - DCE	PCE	LLI - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
05/11/95	0.5 U	0.5 U	0.7 U	0.8 U	0.6 U
04/30/96	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
10/04/96	0.2 U	0.3 U	0.2 U	0.5	0.6
05/05/97	0.2 U	0.3 U	0.2 U	0.2 U	0.2 U
10/09/97	0.2 U	0.2 U	0.2 U	0.3 U	0.2 U
05/01/98	0.2 U	0.3 U	0.2 U	0.2 U	0.2 U
11/06/98	0.2 U	0.5 U	0.7 U	0.6 U	0.6 U
04/19/99	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U, CSH
05/20/99	1.0 U	0.5 U	0.7 U	0.7 U	0.6 U
09/13/99	1.0 U	0.5 U	0.7 U	0.7 U	0.6 U
10/08/99	NS	NS	NS	NS	NS
05/23/00	NS	NS	NS	NS	NS
07/19/00	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U
07/18/01	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U
04/22/02	0.36 U	0.39 U	0.32 U	0.42 U	0.36 U

Table 16 Continued . . .

Date	EC-5				
	L1 - DCA	L1 - DCE	PCE	L11 - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
10/15/85	NA	NA	NA	NA	1.0 U
12/18/91	0.2 U	0.2 U	0.2 U	0.2 U	0.4
06/15/92	NA	NA	NA	NA	1.0 U
06/20/92	NA	NA		NA	1.0 U
05/11/95	0.5 U	0.5 U	0.7 U	0.8 U	0.6 U
06/15/95	NA	NA	NA	NA	1.0 U
04/30/96	0.4 U	0.4 U	0.4 U	0.5	0.7
10/04/96	0.2 U	0.3 U	0.2 U	0.2 U	0.2 U
05/05/97	0.3	0.3 U	0.2 U	0.4	0.4
10/09/97	0.2 U	0.2 U	0.2 U	0.3 U	0.2 U
05/01/98	0.2 U	0.3 U	0.2 U	0.2 U	0.2 U
11/06/98	0.2 U	0.5 U	0.7 U	0.6 U	0.6 U
04/20/99	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U, CSH
05/20/99	1.0 U	0.5 U	0.7 U	0.7 U	0.6 U
09/13/99	1.0 U	0.5 U	0.7 U	0.7 U	0.6 U
10/08/99	NS	NS	NS	NS	NS
05/23/00	NS	NS	NS	NS	NS
07/19/00	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U
07/18/01	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U
10/17/01	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U
04/22/02	0.36 U	0.39 U	0.32 U	0.42 U	0.36 U

Date	EC-6				
	L1 - DCA	L1 - DCE	PCE	L11 - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
10/15/85	NA	NA	NA	NA	4.9
12/18/91	0.6 J	0.2 U	0.2 U	3.0 J	1.0 J
06/15/92	NA	NA	NA	NA	1.0
06/20/92	NA	NA	NA	NA	1.0
05/11/95	0.5 U	0.5 U	0.7 U	0.8 U	0.6 U
06/15/95	NA	NA	NA	NA	1.0
04/30/96	0.7	0.4 U	0.4 U	1.3	1.0
10/04/96	0.2 U	0.3 U	0.2 U	0.5	0.6
05/05/97	0.4	0.3 U	0.2 U	0.6	0.6
10/09/97	0.2 U	0.2 U	0.2 U	0.3 U	0.2
05/01/98	0.3	0.3 U	0.2 U	3.8	2.6
11/06/98	0.2 U	0.5 U	0.7 U	0.7	0.7
04/20/99	0.20 U	0.20 U	0.20 U	0.223 J	0.36 U, CSH
05/20/99	1.0 U	0.5 U	0.7 U	0.7 U	0.6 U
09/13/99	1.0 U	0.5 U	0.7 U	0.7 U	0.6 U
10/08/99	0.15 U	0.15 U	0.15 U	0.15 U	0.589
05/24/00	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U
10/13/00	0.15 U	0.15 U	0.15 U	0.15 U	0.243 J
05/10/01	0.159 J	0.15 U	0.15 U	0.424 J	0.4 U
10/16/01	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U
04/22/02	0.36 U	0.39 U, SPL	0.32 U, SPL	0.483 J	0.36 U

Table 16 Continued . . .

Date	EC-7				
	LI - DCA	LI - DCE	PCE	LI - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
10/15/85	NA	NA	NA	NA	1.0 U
06/20/92	NA	NA	NA	NA	1.0 U
05/11/95	0.5 U	0.5 U	0.7 U	0.8 U	0.6 U
06/15/95	NA	NA	NA	NA	1.0 U
04/30/96	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
10/04/96	0.2 U	0.3 U	0.2 U	0.2 U	0.2 U
05/05/97	0.2 U	0.3 U	0.2 U	0.2 U	0.2 U
10/09/97	0.2 U	0.2 U	0.2 U	0.3 U	0.2 U
05/01/98	0.2 U	0.3 U	0.2 U	0.2 U	0.5
11/06/98	0.2 U	0.5 U	0.7 U	0.6 U	0.6 U
04/20/99	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U, CSH
05/20/99	1.0 U	0.5 U	0.7 U	0.7 U	0.6 U
09/13/99	1.0 U	0.5 U	0.7 U	0.7 U	0.6 U
10/08/99	NS	NS	NS	NS	NS
07/19/00	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U
07/17/01	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U
10/17/01	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U
04/22/02	0.36 U	0.39 U, SPL	0.32 U, SPL	0.42 U	0.36 U

Date	EC-8				
	LI - DCA	LI - DCE	PCE	LI - TCA	TCE
MCL/ES/PAL Limitations	None/850/85	7/7/0.7	5/5/0.5	200/200/40	5/5/0.5
10/15/85	NA	NA	NA	NA	1.0 U
06/20/92	NA	NA	NA	NA	1.0 U
05/11/95	0.5 U	0.5 U	0.7 U	0.8 U	0.6 U
06/15/95	NA	NA	NA	NA	1.0 U
04/30/96	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
10/04/96	0.2 U	0.3 U	0.2 U	0.2 U	0.2 U
05/05/97	0.2 U	0.3 U	0.2 U	0.2 U	0.2 U
10/09/97	0.2 U	0.2 U	0.2 U	0.3 U	0.2 U
05/01/98	0.2 U	0.3 U	0.2 U	0.2 U	0.2 U
11/06/98	0.2 U	0.5 U	0.7 U	0.6 U	0.6 U
04/19/99	0.20 U	0.20 U	0.20 U	0.20 U	0.36 U, CSH
05/20/99	1.0 U	0.5 U	0.7 U	0.7 U	0.6 U
09/13/99	1.0 U	0.5 U	0.7 U	0.7 U	0.6 U
10/08/99	NS	NS	NS	NS	NS
07/19/00	0.15 U	0.15 U	0.15 U	0.15 U	0.4 U
07/18/01	0.38 U	0.38 U	0.26 U	0.2 U	0.26 U
04/22/02	0.36 U	0.39 U	0.32 U	0.42 U	0.36 U

Table 16 Continued . . .

NOTES:

All concentrations are in µg/L (ppb).

Sampling dates not shown on any given well means that samples were not collected from that well during that sampling period.

Values shown in bold are above the NR 140 PAL.

Values shown in bold and shaded are above the MCL/NR 140 ES.

NS = Not sampled.

NA = Not analyzed.

U = Compound not detected at or above this value, which is the detection limit.

CSH = Check standard for this analyte exhibited a high bias. Sample result may also be biased high.

J = Estimated concentration below laboratory quantitation level.

MSH = Matrix spike recovery within analytical batch was high.

Sample matrix appears similar to your sample; result may be biased high.

MSL = Matrix spike recovery within analytical batch was low.

Sample matrix appears similar to your sample; result may be biased low.

Sampling frequency of wells EC-3, 4, 5, 7, and 8 was reduced to annual (July) in September 1999.

SPL = Matrix spike recovery within analytical batch was low. Sample matrix appears similar to your sample; result may be biased low.

APPENDIX A

U.S. EPA and WDNR FIELD INSPECTION FORMS

**FIVE-YEAR REVIEW SITE INSPECTION
NATIONAL PRESTO INDUSTRIES
EAU CLAIRE, WI
NATIONAL PRIORITIES LIST
SUPERFUND SITE
JULY 1, 2002**

**FIVE YEAR REVIEW SITE INSPECTION FOR
NATIONAL PRESTO INDUSTRIES (NPI)
AND EAU CLAIRE MUNICIPAL WELL FIELD
NATIONAL PRIORITIES LIST (NPL) SUPERFUND SITES
JULY 1, 2002**

<u>NAME/TITLE</u>	<u>AFFILIATION</u>	<u>PHONE</u>	<u>E-MAIL</u>
Derrick Paul Project Manager	NPI	715/839-2101	dpaul@gopresto.com
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Dennis Kugle	Gannett Fleming	608/836-1500	dkugle@gfnet.com
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Sheri L. Bianchin Remedial Project Manager	USEPA	312 886 4745	bianchin.sheri @epa.gov
Marcus Kobliska OM Staff	N.P.I	715 839-2108	

Five-Year Review Site Inspection
National Presto Industries
Eau Claire, Wisconsin

July 1 & 2, 2002

- **Status of Five-Year Review Report and Schedule for Completion of Final Draft**
- **Inspection of operable units**
 1. Melby Road (SVE System and Extraction Wells)
 2. Southwest Corner (Extraction Wells)
 3. Air Strippers at Eau Claire North Well Field
- **Inspection of Closed Areas**
 1. Dry Wells
 2. Drainage Ditch #3
 3. Lagoon #1
 4. Lagoon #2
 5. Loading Dock Area
 6. East Disposal Site

Five-Year Review Site Inspection Checklist (Template)

I. SITE INFORMATION	
Site name: National Presto Industries, Inc.	Date of inspection: July 1, 2002
Location and Region: Eau Claire, WI	EPA ID: WID 006196174
Agency, office, or company leading the five-year review: U.S. EPA	Weather/temperature: hot/humid
Remedy Includes: (Check all that apply)	
<input checked="" type="checkbox"/> Landfill cover/containment	
<input checked="" type="checkbox"/> Access controls <i>in place</i>	
<input checked="" type="checkbox"/> Institutional controls	
<input checked="" type="checkbox"/> Groundwater pump and treatment - <i>2 locations</i>	
<input type="checkbox"/> Surface water collection and treatment	
<input checked="" type="checkbox"/> Other _____	
<input type="checkbox"/> Monitored natural attenuation	
<input checked="" type="checkbox"/> Groundwater containment	
<input type="checkbox"/> Vertical barrier walls	
Attachments: <input type="checkbox"/> Inspection team roster attached <input type="checkbox"/> Site map attached	
II. INTERVIEWS (Check all that apply)	
1. O&M site manager <u>Derrick Paul, NPI</u> <u>7-1-02</u> <u>See</u>	
Name _____ Title _____ Date _____	
Interviewed <input checked="" type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____	
Problems, suggestions; <input type="checkbox"/> Report attached _____	
2. O&M staff <u>See attached list</u> _____	
Name _____ Title _____ Date _____	
Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____	
Problems, suggestions; <input type="checkbox"/> Report attached _____	

- Agency _____
 Contact _____
- | Name | Title | Date | Phone no. |
|---|-------|------|-----------|
| Problems; suggestions; <input type="checkbox"/> Report attached | | | |

Agency _____
 Contact _____

Name	Title	Date	Phone no.
Problems; suggestions; <input type="checkbox"/> Report attached _____			

Agency _____
 Contact _____

Name	Title	Date	Phone no.
Problems; suggestions; <input type="checkbox"/> Report attached			

Agency _____
Contact _____

Name	Title	Date	Phone no.
Problems; suggestions; <input type="checkbox"/> Report attached _____			

4. **Other interviews (optional)** ☐ Report attached.

[illegible]

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)				
1.	O&M Documents <input checked="" type="checkbox"/> O&M manual <input checked="" type="checkbox"/> As-built drawings <input checked="" type="checkbox"/> Maintenance logs Remarks <u>On-Site Document Storage</u>	<input type="checkbox"/> Readily available <input type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input type="checkbox"/> Up to date	<input type="checkbox"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A
2.	Site-Specific Health and Safety Plan <input type="checkbox"/> Contingency plan/emergency response plan Remarks _____	<input checked="" type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date <input type="checkbox"/> Up to date	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A
3.	O&M and OSHA Training Records Remarks _____	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A
4.	Permits and Service Agreements <input type="checkbox"/> Air discharge permit <input type="checkbox"/> Effluent discharge <input type="checkbox"/> Waste disposal, POTW <input type="checkbox"/> Other permits _____ Remarks _____	<input type="checkbox"/> Readily available <input checked="" type="checkbox"/> Readily available <input type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input checked="" type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> N/A - Site specific DMK <input checked="" type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A
5.	Gas Generation Records Remarks <u>SVE Monitoring - Monthly</u> <u>GPS Survey upon Completion</u>	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A
6.	Settlement Monument Records Remarks <u>part of walk-over (Elevations tied to GPS)</u> <u>visual observation monthly</u>	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A
7.	Groundwater Monitoring Records Remarks <u>Quarterly</u>	<input checked="" type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
8.	Leachate Extraction Records Remarks _____	<input checked="" type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
9.	Discharge Compliance Records <input checked="" type="checkbox"/> Air <u>Semi-annual</u> <input checked="" type="checkbox"/> Water (effluent) <u>quarterly</u> Remarks _____	NR 400 5.7 #/hr <input checked="" type="checkbox"/> Readily available <input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date <input checked="" type="checkbox"/> Up to date	DMKs <input checked="" type="checkbox"/> N/A <input type="checkbox"/> N/A
10.	Daily Access/Security Logs Remarks <u>Signed by O&M Manager - Mr. Marini</u> <u>Building clearance - Security service</u> <u>monthly walk-over report</u> <u>Cap. required - employees</u> <u>general maintenance</u>	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A

IV. O&M COSTS

1.	O&M Organization	<input type="checkbox"/> State in-house <input checked="" type="checkbox"/> PRP in-house <input type="checkbox"/> Federal Facility in-house <input checked="" type="checkbox"/> Other <u>Contractor assistance</u>	<input type="checkbox"/> Contractor for State <input type="checkbox"/> Contractor for PRP <input type="checkbox"/> Contractor for Federal Facility																																																												
2.	O&M Cost Records	<input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input type="checkbox"/> Funding mechanism/agreement in place Original O&M cost estimate _____ <input type="checkbox"/> Breakdown attached <u>will be provided</u> <div style="text-align: right; margin-right: 50px;"><u>NPI pays 90% of O&M costs of the</u></div> <div style="text-align: center; margin-top: 10px;">Total annual cost by year for review period if available</div> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">From _____</td> <td style="width: 10%;">To _____</td> <td style="width: 20%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 20%;"><input type="checkbox"/> Breakdown attached <u>ECMWR</u></td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td></td> <td></td> <td></td> </tr> <tr> <td>From _____</td> <td>To _____</td> <td></td> <td></td> <td></td> <td><input type="checkbox"/> Breakdown attached</td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td></td> <td></td> <td></td> </tr> <tr> <td>From _____</td> <td>To _____</td> <td></td> <td></td> <td></td> <td><input type="checkbox"/> Breakdown attached</td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td></td> <td></td> <td></td> </tr> <tr> <td>From _____</td> <td>To _____</td> <td></td> <td></td> <td></td> <td><input type="checkbox"/> Breakdown attached</td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td></td> <td></td> <td></td> </tr> <tr> <td>From _____</td> <td>To _____</td> <td></td> <td></td> <td></td> <td><input type="checkbox"/> Breakdown attached</td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td></td> <td></td> <td></td> </tr> </table>		From _____	To _____				<input type="checkbox"/> Breakdown attached <u>ECMWR</u>	Date	Date	Total cost				From _____	To _____				<input type="checkbox"/> Breakdown attached	Date	Date	Total cost				From _____	To _____				<input type="checkbox"/> Breakdown attached	Date	Date	Total cost				From _____	To _____				<input type="checkbox"/> Breakdown attached	Date	Date	Total cost				From _____	To _____				<input type="checkbox"/> Breakdown attached	Date	Date	Total cost			
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3.	Unanticipated or Unusually High O&M Costs During Review Period Describe costs and reasons: <u>New contamination</u> <div style="margin-left: 100px;"> <u>⇒ Lagoon #2</u> <u>⇒ Loading Dock</u> <u>⇒ SW Corner</u> </div>																																																														
V. ACCESS AND INSTITUTIONAL CONTROLS <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A																																																															
A. Fencing																																																															
1.	Fencing damaged	<input checked="" type="checkbox"/> Location shown on site map	<input type="checkbox"/> Gates secured <input checked="" type="checkbox"/> N/A Remarks _____																																																												
B. Other Access Restrictions																																																															
1.	Signs and other security measures	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A Remarks _____																																																												

C. Institutional Controls (ICs)				
1.	Implementation and enforcement Site conditions imply ICs not properly implemented Site conditions imply ICs not being fully enforced	<input type="checkbox"/> Yes <input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A <input type="checkbox"/> N/A
Type of monitoring (e.g., self-reporting, drive by) _____ Frequency _____ Responsible party/agency _____ Contact _____				
	Name	Title	Date	Phone no.
Reporting is up-to-date <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A Reports are verified by the lead agency <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A				
Specific requirements in deed or decision documents have been met <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A Violations have been reported <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A				
Other problems or suggestions: <input type="checkbox"/> Report attached <div style="margin-left: 40px;"> <u>Deed restrictions need to be put into place</u> <u>after areas / types of restrictions are fully defined</u> </div>				
2.	Adequacy	<input type="checkbox"/> ICs are adequate	<input checked="" type="checkbox"/> ICs are inadequate	<input type="checkbox"/> N/A
Remarks _____ _____ _____				
D. General				
1.	Vandalism/trespassing	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> No vandalism evident	
Remarks _____				
2.	Land use changes on site	<input type="checkbox"/> N/A		
Remarks <u>warehouse space</u>				
3.	Land use changes off site	<input type="checkbox"/> N/A		
Remarks _____				
VI. GENERAL SITE CONDITIONS				
A. Roads				
	<input checked="" type="checkbox"/> Applicable	<input type="checkbox"/> N/A		
1.	Roads damaged	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> Roads adequate	<input type="checkbox"/> N/A
Remarks _____				

B. Other Site Conditions		
Remarks _____ _____ _____ _____ _____		
VII. LANDFILL COVERS <input type="checkbox"/> Applicable <input type="checkbox"/> N/A		
A. Landfill Surface		
1.	Settlement (Low spots) Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Settlement not evident Depth _____
2.	Cracks Lengths _____ Widths _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Cracking not evident Depths _____
3.	Erosion Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Erosion not evident Depth _____ <i>several locations - South Side / SE Corner</i>
4.	Holes Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Holes not evident Depth _____ <i>several locations - South Side</i>
5.	Vegetative Cover <input checked="" type="checkbox"/> Grass <input type="checkbox"/> Cover properly established <input type="checkbox"/> No signs of stress <input type="checkbox"/> Trees/Shrubs (indicate size and locations on a diagram) Remarks <i>Base of LF - South Side - Vegetative Cover not fully established</i>	
6.	Alternative Cover (armored rock, concrete, etc.) <input type="checkbox"/> N/A Remarks _____	
7.	Bulges Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Bulges not evident Height _____

8.	Wet Areas/Water Damage <input type="checkbox"/> Wet areas <input type="checkbox"/> Ponding <input type="checkbox"/> Seeps <input type="checkbox"/> Soft subgrade Remarks _____	<input checked="" type="checkbox"/> Wet areas/water damage not evident <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____
9.	Slope Instability <input type="checkbox"/> Slides <input type="checkbox"/> Location shown on site map Areal extent _____ Remarks _____	<input checked="" type="checkbox"/> No evidence of slope instability
B. Benches <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A (Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)		
1.	Flows Bypass Bench Remarks _____	<input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> N/A or okay
2.	Bench Breached Remarks _____	<input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> N/A or okay
3.	Bench Overtopped Remarks _____	<input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> N/A or okay
C. Letdown Channels <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A (Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)		
1.	Settlement Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> No evidence of settlement
2.	Material Degradation Material type _____ Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> No evidence of degradation
3.	Erosion Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of erosion
4.	Undercutting Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of undercutting

5.	Obstructions Type _____ <input type="checkbox"/> Location shown on site map Areal extent _____ Size _____ Remarks _____	<input type="checkbox"/> No obstructions
6.	Excessive Vegetative Growth Type _____ <input type="checkbox"/> No evidence of excessive growth <input type="checkbox"/> Vegetation in channels does not obstruct flow <input type="checkbox"/> Location shown on site map Areal extent _____ Remarks _____	
D. Cover Penetrations <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
1.	Gas Vents <input type="checkbox"/> Active <input type="checkbox"/> Passive <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____	
2.	Gas Monitoring Probes <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____	
3.	Monitoring Wells (within surface area of landfill) <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____	
4.	Leachate Extraction Wells <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____	
5.	Settlement Monuments <input type="checkbox"/> Located <input type="checkbox"/> Routinely surveyed <input type="checkbox"/> N/A Remarks _____	

E. Gas Collection and Treatment <input checked="" type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
1.	Gas Treatment Facilities <i>SUE not treated</i> <input type="checkbox"/> Flaring <input type="checkbox"/> Thermal destruction <input type="checkbox"/> Collection for reuse <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____	
2.	Gas Collection Wells, Manifolds and Piping <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____	
3.	Gas Monitoring Facilities (e.g., gas monitoring of adjacent homes or buildings) <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____	
F. Cover Drainage Layer <input type="checkbox"/> Applicable <input type="checkbox"/> N/A		
1.	Outlet Pipes Inspected <input type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks _____	
2.	Outlet Rock Inspected <input type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks _____	
G. Detention/Sedimentation Ponds <input type="checkbox"/> Applicable <input type="checkbox"/> N/A		
1.	Siltation Areal extent _____ Depth _____ <input type="checkbox"/> N/A <input type="checkbox"/> Siltation not evident Remarks _____	
2.	Erosion Areal extent _____ Depth _____ <input type="checkbox"/> Erosion not evident Remarks _____	
3.	Outlet Works <input type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks _____	
4.	Dam <input type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks _____	

H. Retaining Walls		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Deformations	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Deformation not evident
	Horizontal displacement _____	Vertical displacement _____	
	Rotational displacement _____		
	Remarks _____		
2.	Degradation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Degradation not evident
	Remarks _____		
I. Perimeter Ditches/Off-Site Discharge		<input checked="" type="checkbox"/> Applicable	<input type="checkbox"/> N/A
1.	Siltation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Siltation not evident
	Areal extent _____	Depth _____	
	Remarks _____		
2.	Vegetative Growth	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A
	<input type="checkbox"/> Vegetation does not impede flow		
	Areal extent _____	Type _____	
	Remarks _____		
3.	Erosion	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Erosion not evident
	Areal extent _____	Depth _____	
	Remarks _____		
4.	Discharge Structure	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A
	Remarks _____		
VIII. VERTICAL BARRIER WALLS		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Settlement	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Settlement not evident
	Areal extent _____	Depth _____	
	Remarks _____		
2.	Performance Monitoring	Type of monitoring _____	
	<input type="checkbox"/> Performance not monitored		
	Frequency _____	<input type="checkbox"/> Evidence of breaching	
	Head differential _____		
	Remarks _____		

Perimeter Ditch feeds detention pond

OK

IX. GROUNDWATER/SURFACE WATER REMEDIES <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A	
A. Groundwater Extraction Wells, Pumps, and Pipelines <input type="checkbox"/> Applicable <input type="checkbox"/> N/A	
1.	Pumps, Wellhead Plumbing, and Electrical <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> All required wells properly operating <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____ _____
2.	Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____
3.	Spare Parts and Equipment — <i>seems to be in order</i> <input type="checkbox"/> Readily available <input type="checkbox"/> Good condition <input type="checkbox"/> Requires upgrade <input type="checkbox"/> Needs to be provided Remarks _____ _____
B. Surface Water Collection Structures, Pumps, and Pipelines <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A	
1.	Collection Structures, Pumps, and Electrical <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____
2.	Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____
3.	Spare Parts and Equipment <input type="checkbox"/> Readily available <input type="checkbox"/> Good condition <input type="checkbox"/> Requires upgrade <input type="checkbox"/> Needs to be provided Remarks _____ _____

C. Treatment System		<input type="checkbox"/> Applicable <input type="checkbox"/> N/A
1.	Treatment Train (Check components that apply) <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <div> <input type="checkbox"/> Metals removal <input type="checkbox"/> Air stripping <input type="checkbox"/> Filters <input type="checkbox"/> Additive (e.g., chelation agent, flocculent) <input checked="" type="checkbox"/> Others <u>Cascade Aerators - also Air Strippers off-site</u> <input type="checkbox"/> Good condition <input type="checkbox"/> Sampling ports properly marked and functional <input type="checkbox"/> Sampling/maintenance log displayed and up to date <input type="checkbox"/> Equipment properly identified <input type="checkbox"/> Quantity of groundwater treated annually _____ <input type="checkbox"/> Quantity of surface water treated annually _____ </div> <div> <input type="checkbox"/> Oil/water separation <input type="checkbox"/> Carbon adsorbers <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> Bioremediation </div> </div> Remarks _____	
2.	Electrical Enclosures and Panels (properly rated and functional) <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance </div> Remarks _____	
3.	Tanks, Vaults, Storage Vessels <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Proper secondary containment <input type="checkbox"/> Needs Maintenance </div> Remarks _____	
4.	Discharge Structure and Appurtenances <u>Discharge pipe submerged in river</u> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance </div> Remarks _____	
5.	Treatment Building(s) <u>Sheds for pump and barrier</u> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good condition (esp. roof and doorways) <input type="checkbox"/> Needs repair </div> <input type="checkbox"/> Chemicals and equipment properly stored Remarks _____	
6.	Monitoring Wells (pump and treatment remedy) <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <div> <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> All required wells located </div> <div> <input type="checkbox"/> Functioning <input type="checkbox"/> Needs Maintenance </div> <div> <input type="checkbox"/> Routinely sampled <input type="checkbox"/> N/A </div> <div> <input type="checkbox"/> Good condition </div> </div> Remarks <u>some wells require maintenance → see attached</u>	
D. Monitoring Data		
1.	Monitoring Data <input checked="" type="checkbox"/> Is routinely submitted on time <input checked="" type="checkbox"/> Is of acceptable quality	
2.	Monitoring data suggests: <input type="checkbox"/> Groundwater plume is effectively contained <input checked="" type="checkbox"/> Contaminant concentrations are declining	

However, PAH exceedances still evident in
 plumes 1, 12 and 3/4 such as MW-40, 41, 43,
 34, 53, 55, 29, 64 and 65.

D. Monitored Natural Attenuation	
1.	Monitoring Wells (natural attenuation remedy) <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> All required wells located <input type="checkbox"/> Needs Maintenance <input checked="" type="checkbox"/> N/A Remarks _____ _____
X. OTHER REMEDIES	
If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction. <i>Soil Vapor Extraction (SVE) included in Cap Remedy at Melby Rm. 1</i>	
XI. OVERALL OBSERVATIONS	
A. Implementation of the Remedy	
Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). <i>Containing contamination on-site</i> <i>off-site contamination is addressed through</i> <i>pump + treat at municipal wells +</i> <i>restricted uses - ordinances</i> <i>Minimizing further groundwater degradation</i> <i>Cap + wells need some maintenance</i>	
B. Adequacy of O&M	
Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. <i>Okay</i>	

C. Early Indicators of Potential Remedy Problems

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.

Ordinary O&M costs

D. Opportunities for Optimization

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

will be addressed in report

Kramer, Eileen

From: Kramer, Eileen
Sent: Wednesday, July 17, 2002 1:30 PM
To: 'dolig@GFNET.com'
Cc: Kramer, Eileen
Subject: NPI Monitoring wells

Hmm I'm not surprised that my scrawl is difficult to make out there. Here are the mystery wells:

MW40B Wells (40A and 40B) near intersection of White and McMillen, no longer exist according to Darrell Dallman of Gannet Fleming; removed when new building constructed; Huebsch Linen, 3605 White Ave.

MW41A White Ave., in front of Indianhead Warehouse Corp. labelled, not locked

MW41B White Ave., in front of Indianhead Warehouse Corp., not labelled, not locked

43A and 43B, in front of Max Phillips, flush mounts, not locked, tool not needed to lift flush mount protective cover, dirt and debris accumulated inside space between well riser and pro top, 43A not labelled

45A, 45B, 45C flush mounts, near airport, labelled, not locked, required tool to open pro top cover.

I think the rest of my notes should be understandable.

608-831-3337

7/2/2002

Cliff Wright, Sheri Bianchini, E. Kromer
& others

PW-1 no lock, no cover on

PVC, pro top settled(?) not labelled

EC-6 not labelled, const'n not NR 141

EC-1

EC-2

EC-5

EC-4

EC-3

EC-8

EC-7 labelled 807,

MW-5A OK

5B OK

MW 6 OK

MW 63A OK

MW 66A OK

66B OK

MW 7 concrete surf. seal heaved(?)

MW 17B lid on pro top not closable

17C concrete surf. seal heaved(?) ~ 2"

MW 10A - pro top ~ 10-12" high

MW 10B

MW 11A OK

11B OK

MW 67A not locked, surf. seal needs repair

67B OK

Table 4 Continued

Well No.	Location	Original Purpose of Well	Current Frequency	Proposed Frequency	Rationale
EC-1	Eau Claire well field	Plume	Semi-annual	Semi-annual	TCE < ES
EC-2	Eau Claire well field	Plume	Semi-annual	Quarterly	TCE > ES
EC-3	Eau Claire well field	Downgradient of well field	Semi-annual	None	TCE - ND since 1996
EC-4	Eau Claire well field	Downgradient of well field	Semi-annual	None	TCE - ND since 1996
EC-5	Eau Claire well field	Sidegradient-plume edge definition	Semi-annual	None	TCE - ND since 1996
EC-6	Eau Claire well field	Sidegradient-plume edge definition	Semi-annual	Semi-annual	TCE < ES
EC-7	Eau Claire well field	Sidegradient-plume edge definition	Semi-annual	None	TCE - ND since 1998
EC-8	Eau Claire well field	Sidegradient-plume edge definition	Semi-annual	None	TCE - ND since 1985
RW-3 A	Off-site plume	Plume	Semi-annual	Semi-annual	TCE < ES
RW-3 B	Off-site plume	Plume	Semi-annual	Quarterly	TCE > ES
RW-3 C	Off-site plume	Plume	Semi-annual	Quarterly	TCE > ES
RW-16	Off-site plume	Plume	Semi-annual	Semi-annual	TCE > ES
RW-16 B	Off-site plume	Plume	Semi-annual	Quarterly	TCE > ES
RW-16 C	Off-site plume	Plume	Semi-annual	Quarterly	TCE > ES
PW-1	On-site up/side gradient	Petroleum/drain ditch #3/E. ext. Lagoon #1	Semi-annual (Cd only)	Annual (Cd only)	Cd <= PAL
Plume 3/4 Wells					
Well No.	Location	Original Purpose of Well	Current Frequency	Proposed Frequency With EW1 and 2 Pumping /Without Pumping	Rationale
MW-5 A	Melby Road	On-site sentinel	Quarterly	Semiannual/Semiannual	PCE < PAL/sentinel
MW-5 B	Melby Road	On-site sentinel	Quarterly	Semiannual/Semiannual	PCE < PAL/sentinel
MW-6	Melby Road	On-site perimeter	Quarterly	None/Annual	All compounds always < PAL
MW-9 A	Off-site downgradient	Off-site	Quarterly	None/Annual (2)	TCA < DL
MW-9 B	Off-site downgradient	Off-site	Quarterly	None/Annual (2)	TCA < DL
MW-27 A	Off-site downgradient	Off-site plume definition	Semi-annual	None/None	All compounds always < DL
MW-27 B	Off-site downgradient	Off-site plume definition	Semi-annual	Annual/Annual	TCE < DL
MW-29 A	Off-site downgradient	Lake Hallie plume definition	Semi-annual	Annual/Annual	All compounds always < PAL
MW-29 B	Off-site downgradient	Lake Hallie plume definition	Semi-annual	Semi-annual/Semi-annual	TCE > = PAL
MW-33 A	Off-site downgradient	Off-site plume definition	Semi-annual	Annual/Annual	All compounds always < PAL
MW-33 B	Off-site downgradient	Off-site plume definition	Semi-annual	Semi-annual/Semi-annual	TCE < ES
MW-63 A	Melby Road	On-site sentinel	Quarterly	Annual/Annual	TCA < PAL/sentinel
MW-64 B	Off-site downgradient	Off-site plume	Semi-annual	Semi-annual/Semi-annual	TCE < ES
MW-64 C	Off-site downgradient	Off-site plume	Semi-annual	Semi-annual/Semi-annual	TCE < ES
MW-65 B	Off-site downgradient	Off-site plume	Annual	Semi-annual/Semi-annual	TCE < ES
MW-65 C	Off-site downgradient	Off-site plume	Annual	Semi-annual/Semi-annual	TCE < ES
MW-66 A	Melby Road	On-site perimeter	Quarterly	None/Annual (2)	TCE < DL
MW-66 B	Melby Road	On-site perimeter	Semi-annual	Annual/Annual	TCE < PAL

Table 4 Continued . . .

Plume 5 Wells					
Well No.	Location	Original Purpose of Well	Current Frequency	Proposed Frequency	Rationale
MW-7	On-site downgradient	Plume edge definition	Semi-annual	None	PCE = ND since 1988
MW-17 B	East Disposal Site	East Disposal Site-Source Area/Sentinel	Semi-annual	Annual	TCE < DL/sentinel
MW-17 C	East Disposal Site	East Disposal Site-Source Area/Sentinel	Semi-annual	Annual	TCE < DL/sentinel
MW-19	On-site downgradient	Plume definition	Annual	Annual	TCE < PAL
MW-72	East Disposal Site	East Disposal Site-Source Area/Sentinel	Quarterly	Quarterly	TCE < ES/sentinel
MW-73	East Disposal Site	East Disposal Site-Source Area/Sentinel	Quarterly	Semi-annual	TCE < or = PAL/sentinel
67 (Joles)	Off-site downgradient	Plume definition	Semi-annual	None	TCE < DL
218 (Martens)	Off-site downgradient	Plume definition	Semi-annual	None	ND since 1989
230 (Hienfeld)	Off-site downgradient	Plume definition	Semi-annual	None	ND since 1999

NOTE:

 Proposed changes to sampling frequency.

FOOTNOTE:

(1) Criteria for Adjustments to Groundwater Sampling Frequency

1. Results from last four rounds of sampling are all \geq ES = Quarterly.
2. Results from last four rounds of sampling are all $<$ ES = Semi-annual.
3. Results from last four rounds of sampling are all $<$ PAL, but above the detection limit (DL) = Annual.
4. Results from last four rounds of sampling are $<$ DL = None.
5. In the event of a spike, where a PAL or ES is exceeded, sampling automatically becomes semi-annual or quarterly, respectively. If the results of both of the next two rounds are below the PAL or ES, the spike will be considered an anomaly and monitoring will revert back to the previous frequency. If the results of both of the next two rounds continue to exceed the PAL or ES, the frequency will remain elevated and the above criteria (1, 2, and 3) will control future changes.
6. All sentinel wells will automatically be one frequency higher than criteria 2 through 4 above.
7. No sentinel wells will ever drop below annual.

NATIONAL PRESTO INDUSTRIES, INC.
EAU CLAIRE, WISCONSIN

TABLE 4

WELLS CURRENTLY MONITORED

Plume 1/2 Wells					Rationale
Well No.	Location	Original Purpose of Well	Current Frequency	Proposed Frequency	
MW-4 A	SW Corner	On-site downgradient-plume edge definition	Quarterly	None	ND of any VOCs since 1996
MW-4 B	SW Corner	On-site downgradient-plume edge definition	Quarterly	None	TCE < ES
MW-10 A	SW Corner	On-site sidegradient	Semi-annual (Cd only)	Quarterly (Cd only)	TCE < DL, Cd > ES
MW-10 B	SW Corner	On-site sidegradient	Semi-annual (Cd only)	Semi-annual (Cd only)	TCE < DL, Cd > ES
MW-11 A	On-site up/side gradient	Onsite-drain ditch #3/E. ext. Lagoon #1	Semi-annual (+Cd)	Annual (Cd only)	TCE < PAL, Cd > ES
MW-11 B	On-site up/side gradient	Onsite-drain ditch #3/E. ext. Lagoon #1	Semi-annual (+Cd)	None	TCE < PAL, Cd < DL
MW-23 A	SW Corner	Off-site sentinel	Quarterly	Semi-annual	TCE < PAL/sentinel
MW-23 B	SW Corner	Off-site sentinel	Quarterly	Semi-annual	TCE < PAL/sentinel
MW-34 A	SW Corner	On-site source	Quarterly	Quarterly (+Cd)	TCE > ES, Cd > PAL
MW-34 B	SW Corner	On-site source	Quarterly	Annual (+Cd Quarterly)	TCE < PAL
MW-34 C	SW Corner	On-site source	Quarterly	Annual (+Cd)	TCE < PAL
MW-39 B	SW Corner	On-site sidegradient perimeter	Annual	None	ND of any VOCs since 1994
MW-40 B	Off-site plume	Plume edge definition	Semi-annual until 10/2000	None	TCE < PAL (Destroyed)
MW-41 A	Off-site plume	Plume edge definition	Semi-annual	Quarterly	TCE > ES
MW-41 B	Off-site plume	Plume edge definition	Semi-annual	Quarterly	TCE > ES
MW-43 A	Off-site plume	Plume centerline	Semi-annual	Semi-annual	TCE < ES
MW-43 B	Off-site plume	Plume centerline	Semi-annual	Semi-annual	TCE < ES
MW-45 A	Off-site plume	Plume	Semi-annual	Semi-annual	TCE < ES
MW-45 B	Off-site plume	Plume	Semi-annual	Quarterly	TCE > ES
MW-45 C	Off-site plume	Plume	Semi-annual	Quarterly	TCE > ES
MW-53 A	Off-site plume	Plume	Semi-annual	Semi-annual	TCE < ES
MW-53 B	Off-site plume	Plume	Semi-annual	Quarterly	TCE > ES
MW-67 A	SW Corner	On-site downgradient	Quarterly	Semi-annual	TCE < ES
MW-67 B	SW Corner	On-site downgradient	Quarterly	Annual	TCE < PAL
MW-68 A	SW Corner	On-site sentinel	Quarterly	Quarterly	TCE < ES/sentinel
MW-68 B	SW Corner	On-site sentinel	Quarterly	Quarterly	TCE < ES/sentinel
MW-69 A	SW Corner	On-site sentinel	Quarterly	Annual	TCE < DL /sentinel
MW-69 B	SW Corner	On-site sentinel	Quarterly	Annual	TCE < DL /sentinel
MW-70 A	SW Corner	Source	Quarterly	Quarterly	TCE > ES
MW-70 B	SW Corner	Source	Quarterly	Quarterly	TCE > ES
MW-71 B	SW Corner	On-site sidegradient-plume edge definition	Annual	None	TCE - ND since 1994

**FIVE-YEAR REVIEW SITE INSPECTION
EAU CLAIRE MUNICIPAL WELL FIELD
EAU CLAIRE, WI
NATIONAL PRIORITIES LIST
SUPERFUND SITE
JULY 2, 2002**

**FIVE YEAR REVIEW SITE INSPECTION FOR
NATIONAL PRESTO INDUSTRIES (NPI)
AND EAU CLAIRE MUNICIPAL WELL FIELD
NATIONAL PRIORITIES LIST (NPL) SUPERFUND SITES
JULY 2, 2002**

<u>NAME/TITLE</u>	<u>AFFILIATION</u>	<u>PHONE</u>	<u>E-MAIL</u>
Sam Spence Utilities Admin	City of Eau Claire	715.839.4900 715.839.4900	sspace@cityofec.com claire.wi.us
Cliff Wright Project Eng.	Garrett Fleming	608/830-1500 ext. 43	acwright@gfnet.com
Sheri Bianchin Remedial Project Manager	USEPA	312.1881.4745	Bianchin.sheri@epa.gov
Eileen Kramer Hydrogeologist - Project Mgr.	WDNR	715.839.3824	eileen.kramer@dnr.state.wi.us
Lana Thiel Lead Tech	Operator II City of E.C.		

Five-Year Review Site Inspection Checklist (Template)

(Working document for site inspection. Information may be completed by hand and attached to the Five-Year Review report as supporting documentation of site status. "N/A" refers to "not applicable.")

I. SITE INFORMATION	
Site name: Eau Claire Municipal Well Field (ECMWF)	Date of inspection: July 2, 2002
Location and Region: Eau Claire, WI	EPA ID: WID 980820054
Agency, office, or company leading the five-year review: U.S. EPA	Weather/temperature: hot/humid
Remedy Includes: (Check all that apply) <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <input type="checkbox"/> Landfill cover/containment <input type="checkbox"/> Access controls <input type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____ </div> <div style="width: 45%;"> <input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls </div> </div>	
Attachments: <input checked="" type="checkbox"/> Inspection team roster attached <input type="checkbox"/> Site map attached	
II. INTERVIEWS (Check all that apply)	
1. O&M site manager <u>Sam Spanel</u> , <u>PE</u> , <u>Utility Administrator</u> <u>7-2-02</u> <div style="display: flex; justify-content: space-between; font-size: small;"> Name Title Date </div> Interviewed <input checked="" type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ Problems, suggestions; <input type="checkbox"/> Report attached _____ _____	
2. O&M staff <u>See attached</u> <u>Tim Greene</u> , <u>Superintendent</u> <div style="display: flex; justify-content: space-between; font-size: small;"> Name Title Date </div> Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ Problems, suggestions; <input type="checkbox"/> Report attached _____ _____	

10 plant operators - all have responsibility.
all trained by Tim Greene.

Steve Hayden - Utilities Engineer Lead on repair + start-ups

A-1

Sample Collection: Chemists - Craig Gipper & Kathy White
715-839-6121

3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency _____
 Contact _____

Name	Title	Date	Phone no.
Problems; suggestions; <input type="checkbox"/> Report attached _____			

Agency _____
 Contact _____

Name	Title	Date	Phone no.
Problems; suggestions; <input type="checkbox"/> Report attached _____			

Agency _____
 Contact _____

Name	Title	Date	Phone no.
Problems; suggestions; <input type="checkbox"/> Report attached _____			

Agency _____
 Contact _____

Name	Title	Date	Phone no.
Problems; suggestions; <input type="checkbox"/> Report attached _____			

4. **Other interviews (optional)** ☐ Report attached.

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)				
1.	O&M Documents <input checked="" type="checkbox"/> O&M manual <input checked="" type="checkbox"/> As-built drawings <input checked="" type="checkbox"/> Maintenance logs Remarks _____	<input checked="" type="checkbox"/> Readily available <input checked="" type="checkbox"/> Readily available <input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date <input checked="" type="checkbox"/> Up to date <input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A
2.	Site-Specific Health and Safety Plan <input type="checkbox"/> Contingency plan/emergency response plan Remarks <u>City Wide Safety Plan exists</u>	<input checked="" type="checkbox"/> Readily available <input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date <input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A <input type="checkbox"/> N/A
3.	O&M and OSHA Training Records Remarks <u>Annual lock-out/tag-out and confined space entry training</u>	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A
4.	Permits and Service Agreements <input type="checkbox"/> Air discharge permit <input type="checkbox"/> Effluent discharge <input type="checkbox"/> Waste disposal, POTW <input type="checkbox"/> Other permits _____ Remarks _____	<input type="checkbox"/> Readily available <input type="checkbox"/> Readily available <input type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A
5.	Gas Generation Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
6.	Settlement Monument Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
7.	Groundwater Monitoring Records Remarks _____	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A
8.	Leachate Extraction Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
9.	Discharge Compliance Records <input type="checkbox"/> Air <input checked="" type="checkbox"/> Water (effluent) Remarks _____	<input type="checkbox"/> Readily available <input checked="" type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A <input type="checkbox"/> N/A
10.	Daily Access/Security Logs Remarks <u>Door locked, entry alarm to security, restricted access in wellfield</u> <u>Some minor vegetation w/ ski trail</u> <u>Wells - Most are protected in buildings - w/ entry alarm</u> <u>All roads gated</u>	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A

IV. O&M COSTS

1.	O&M Organization <input type="checkbox"/> State in-house <input type="checkbox"/> PRP in-house <input type="checkbox"/> Federal Facility in-house <input checked="" type="checkbox"/> Other <u>municipality</u>	<input type="checkbox"/> Contractor for State <input type="checkbox"/> Contractor for PRP <input type="checkbox"/> Contractor for Federal Facility																																								
2.	O&M Cost Records <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input type="checkbox"/> Funding mechanism/agreement in place Original O&M cost estimate _____ <input type="checkbox"/> Breakdown attached <p style="text-align: center;">Total annual cost by year for review period if available</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">From _____</td> <td style="width: 20%;">To _____</td> <td style="width: 40%;">_____</td> <td style="width: 20%; text-align: right;"><input type="checkbox"/> Breakdown attached</td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td></td> </tr> <tr> <td>From _____</td> <td>To _____</td> <td>_____</td> <td style="text-align: right;"><input type="checkbox"/> Breakdown attached</td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td></td> </tr> <tr> <td>From _____</td> <td>To _____</td> <td>_____</td> <td style="text-align: right;"><input type="checkbox"/> Breakdown attached</td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td></td> </tr> <tr> <td>From _____</td> <td>To _____</td> <td>_____</td> <td style="text-align: right;"><input type="checkbox"/> Breakdown attached</td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td></td> </tr> <tr> <td>From _____</td> <td>To _____</td> <td>_____</td> <td style="text-align: right;"><input type="checkbox"/> Breakdown attached</td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td></td> </tr> </table>		From _____	To _____	_____	<input type="checkbox"/> Breakdown attached	Date	Date	Total cost		From _____	To _____	_____	<input type="checkbox"/> Breakdown attached	Date	Date	Total cost		From _____	To _____	_____	<input type="checkbox"/> Breakdown attached	Date	Date	Total cost		From _____	To _____	_____	<input type="checkbox"/> Breakdown attached	Date	Date	Total cost		From _____	To _____	_____	<input type="checkbox"/> Breakdown attached	Date	Date	Total cost	
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Date	Date	Total cost																																								
3.	Unanticipated or Unusually High O&M Costs During Review Period Describe costs and reasons: _____ _____ _____ _____ _____																																									
V. ACCESS AND INSTITUTIONAL CONTROLS <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A																																										
A. Fencing																																										
1.	Fencing damaged Remarks _____ _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Gates secured <input type="checkbox"/> N/A																																								
B. Other Access Restrictions																																										
1.	Signs and other security measures Remarks _____ _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> N/A																																								

C. Treatment System <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A			
1.	Treatment Train (Check components that apply) <input type="checkbox"/> Metals removal <input type="checkbox"/> Oil/water separation <input type="checkbox"/> Bioremediation <input checked="" type="checkbox"/> Air stripping <input type="checkbox"/> Carbon adsorbers <input type="checkbox"/> Filters <input type="checkbox"/> Additive (e.g., chelation agent, flocculent) _____ <input type="checkbox"/> Others _____ <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance <input checked="" type="checkbox"/> Sampling ports properly marked and functional <input checked="" type="checkbox"/> Sampling/maintenance log displayed and up to date <input checked="" type="checkbox"/> Equipment properly identified <input type="checkbox"/> Quantity of groundwater treated annually _____ <input type="checkbox"/> Quantity of surface water treated annually _____ Remarks _____		
2.	Electrical Enclosures and Panels (properly rated and functional) <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____		
3.	Tanks, Vaults, Storage Vessels <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Proper secondary containment <input type="checkbox"/> Needs Maintenance Remarks _____		
4.	Discharge Structure and Appurtenances <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____		
5.	Treatment Building(s) <input type="checkbox"/> N/A <input type="checkbox"/> Good condition (esp. roof and doorways) <input type="checkbox"/> Needs repair <input type="checkbox"/> Chemicals and equipment properly stored Remarks _____		
6.	Monitoring Wells (pump and treatment remedy) <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> All required wells located <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____		
D. Monitoring Data			
1.	Monitoring Data <input checked="" type="checkbox"/> Is routinely submitted on time <input checked="" type="checkbox"/> Is of acceptable quality		
2.	Monitoring data suggests: <input type="checkbox"/> Groundwater plume is effectively contained <input checked="" type="checkbox"/> Contaminant concentrations are declining		

D. Monitored Natural Attenuation

1.	Monitoring Wells (natural attenuation remedy)	
----	--	--

- ☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ All required wells located ☐ Needs Maintenance ☐ N/A

Remarks _____

X. OTHER REMEDIES

If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).

[illegible]

B. Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

[illegible]

C. Early Indicators of Potential Remedy Problems
<p>Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.</p> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
D. Opportunities for Optimization
<p>Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.</p> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)			
1.	O&M Documents <input type="checkbox"/> O&M manual <input type="checkbox"/> As-built drawings <input type="checkbox"/> Maintenance logs Remarks _____	<input checked="" type="checkbox"/> Readily available <input type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date <input checked="" type="checkbox"/> Up to date <input checked="" type="checkbox"/> Up to date <input type="checkbox"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A
2.	Site-Specific Health and Safety Plan <input type="checkbox"/> Contingency plan/emergency response plan Remarks _____	<input checked="" type="checkbox"/> Readily available <input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date <input checked="" type="checkbox"/> Up to date <input type="checkbox"/> N/A <input type="checkbox"/> N/A
3.	O&M and OSHA Training Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input type="checkbox"/> N/A
4.	Permits and Service Agreements <input type="checkbox"/> Air discharge permit <input type="checkbox"/> Effluent discharge <input type="checkbox"/> Waste disposal, POTW <input type="checkbox"/> Other permits _____ Remarks _____	<input type="checkbox"/> Readily available <input type="checkbox"/> Readily available <input type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input type="checkbox"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A <input type="checkbox"/> N/A
5.	Gas Generation Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input type="checkbox"/> N/A
6.	Settlement Monument Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A
7.	Groundwater Monitoring Records Remarks _____	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date <input type="checkbox"/> N/A
8.	Leachate Extraction Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A
9.	Discharge Compliance Records <input type="checkbox"/> Air <input checked="" type="checkbox"/> Water (effluent) Remarks _____	<input type="checkbox"/> Readily available <input checked="" type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input checked="" type="checkbox"/> Up to date <input type="checkbox"/> N/A <input type="checkbox"/> N/A
10.	Daily Access/Security Logs Remarks _____	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date <input type="checkbox"/> N/A
IV. O&M COSTS			

1.	O&M Organization <input type="checkbox"/> State in-house <input type="checkbox"/> PRP in-house <input type="checkbox"/> Federal Facility in-house <input checked="" type="checkbox"/> Other _____	<input type="checkbox"/> Contractor for State <input type="checkbox"/> Contractor for PRP <input type="checkbox"/> Contractor for Federal Facility																																																													
2.	O&M Cost Records <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input type="checkbox"/> Funding mechanism/agreement in place Original O&M cost estimate _____ <input type="checkbox"/> Breakdown attached <div style="text-align: center;">Total annual cost by year for review period if available</div> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">From _____</td> <td style="width: 15%;">To _____</td> <td style="width: 15%;"></td> <td style="width: 15%;"></td> <td style="width: 15%;"></td> <td style="width: 20%;"></td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td colspan="3"><input type="checkbox"/> Breakdown attached</td> </tr> <tr> <td>From _____</td> <td>To _____</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td colspan="3"><input type="checkbox"/> Breakdown attached</td> </tr> <tr> <td>From _____</td> <td>To _____</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td colspan="3"><input type="checkbox"/> Breakdown attached</td> </tr> <tr> <td>From _____</td> <td>To _____</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td colspan="3"><input type="checkbox"/> Breakdown attached</td> </tr> <tr> <td>From _____</td> <td>To _____</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td colspan="3"><input type="checkbox"/> Breakdown attached</td> </tr> </table>			From _____	To _____					Date	Date	Total cost	<input type="checkbox"/> Breakdown attached			From _____	To _____					Date	Date	Total cost	<input type="checkbox"/> Breakdown attached			From _____	To _____					Date	Date	Total cost	<input type="checkbox"/> Breakdown attached			From _____	To _____					Date	Date	Total cost	<input type="checkbox"/> Breakdown attached			From _____	To _____					Date	Date	Total cost	<input type="checkbox"/> Breakdown attached		
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3.	Unanticipated or Unusually High O&M Costs During Review Period Describe costs and reasons: _____ _____ _____ _____ _____																																																														
V. ACCESS AND INSTITUTIONAL CONTROLS <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A																																																															
A. Fencing																																																															
1.	Fencing damaged Remarks _____ _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Gates secured <input type="checkbox"/> N/A																																																													
B. Other Access Restrictions																																																															
1.	Signs and other security measures Remarks _____ _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> N/A																																																													

C. Institutional Controls (ICs)								
1.	Implementation and enforcement Site conditions imply ICs not properly implemented Site conditions imply ICs not being fully enforced Type of monitoring (e.g., self-reporting, drive by) _____ Frequency _____ Responsible party/agency _____ Contact _____	<input type="checkbox"/> Yes <input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A <input type="checkbox"/> N/A				
	<table style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 40%; text-align: left;">Name</th> <th style="width: 20%; text-align: left;">Title</th> <th style="width: 20%; text-align: left;">Date</th> <th style="width: 20%; text-align: left;">Phone no.</th> </tr> </table>	Name	Title	Date	Phone no.			
Name	Title	Date	Phone no.					
	Reporting is up-to-date Reports are verified by the lead agency	<input type="checkbox"/> Yes <input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> No	<input type="checkbox"/> N/A <input type="checkbox"/> N/A				
	Specific requirements in deed or decision documents have been met Violations have been reported Other problems or suggestions: <input type="checkbox"/> Report attached	<input type="checkbox"/> Yes <input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> No	<input type="checkbox"/> N/A <input type="checkbox"/> N/A				
2.	Adequacy Remarks <u>Zoning restricts private well usage in the area</u>	<input checked="" type="checkbox"/> ICs are adequate <input type="checkbox"/> ICs are inadequate <input type="checkbox"/> N/A						
D. General								
1.	Vandalism/trespassing Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No vandalism evident						
2.	Land use changes on site <input type="checkbox"/> N/A Remarks _____							
3.	Land use changes off site <input type="checkbox"/> N/A Remarks _____							
VI. GENERAL SITE CONDITIONS								
A. Roads <input type="checkbox"/> Applicable <input type="checkbox"/> N/A								
1.	Roads damaged Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Roads adequate <input type="checkbox"/> N/A						

B. Other Site Conditions		
Remarks _____ _____ _____ _____ _____		
VII. LANDFILL COVERS <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
A. Landfill Surface		
1.	Settlement (Low spots) Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Settlement not evident
2.	Cracks Lengths _____ Widths _____ Depths _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Cracking not evident
3.	Erosion Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Erosion not evident
4.	Holes Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Holes not evident
5.	Vegetative Cover <input type="checkbox"/> Grass <input type="checkbox"/> Cover properly established <input type="checkbox"/> No signs of stress <input type="checkbox"/> Trees/Shrubs (indicate size and locations on a diagram) Remarks _____	
6.	Alternative Cover (armored rock, concrete, etc.) <input type="checkbox"/> N/A Remarks _____	
7.	Bulges Areal extent _____ Height _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Bulges not evident

8.	Wet Areas/Water Damage <input type="checkbox"/> Wet areas <input type="checkbox"/> Ponding <input type="checkbox"/> Seeps <input type="checkbox"/> Soft subgrade Remarks _____	<input type="checkbox"/> Wet areas/water damage not evident <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____ <input type="checkbox"/> Location shown on site map Areal extent _____
9.	Slope Instability <input type="checkbox"/> Slides <input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of slope instability Areal extent _____ Remarks _____	
B. Benches <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A (Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)		
1.	Flows Bypass Bench Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> N/A or okay
2.	Bench Breached Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> N/A or okay
3.	Bench Overtopped Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> N/A or okay
C. Letdown Channels <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A (Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)		
1.	Settlement Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of settlement
2.	Material Degradation Material type _____ Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of degradation
3.	Erosion Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of erosion
4.	Undercutting Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of undercutting

5.	Obstructions Type _____ <input type="checkbox"/> Location shown on site map Areal extent _____ Size _____ Remarks _____	<input type="checkbox"/> No obstructions
6.	Excessive Vegetative Growth Type _____ <input type="checkbox"/> No evidence of excessive growth <input type="checkbox"/> Vegetation in channels does not obstruct flow <input type="checkbox"/> Location shown on site map Areal extent _____ Remarks _____	
D. Cover Penetrations <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
1.	Gas Vents <input type="checkbox"/> Active <input type="checkbox"/> Passive <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____	
2.	Gas Monitoring Probes <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____	
3.	Monitoring Wells (within surface area of landfill) <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____	
4.	Leachate Extraction Wells <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____	
5.	Settlement Monuments <input type="checkbox"/> Located <input type="checkbox"/> Routinely surveyed <input type="checkbox"/> N/A Remarks _____	

E. Gas Collection and Treatment <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
1.	Gas Treatment Facilities <input type="checkbox"/> Flaring <input type="checkbox"/> Thermal destruction <input type="checkbox"/> Collection for reuse <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____	
2.	Gas Collection Wells, Manifolds and Piping <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____	
3.	Gas Monitoring Facilities (e.g., gas monitoring of adjacent homes or buildings) <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____ _____	
F. Cover Drainage Layer <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
1.	Outlet Pipes Inspected <input type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks _____ _____	
2.	Outlet Rock Inspected <input type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks _____ _____	
G. Detention/Sedimentation Ponds <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
1.	Siltation Areal extent _____ Depth _____ <input type="checkbox"/> N/A <input type="checkbox"/> Siltation not evident Remarks _____ _____	
2.	Erosion Areal extent _____ Depth _____ <input type="checkbox"/> Erosion not evident Remarks _____ _____	
3.	Outlet Works <input type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks _____ _____	
4.	Dam <input type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks _____ _____	

H. Retaining Walls		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Deformations Horizontal displacement _____ Rotational displacement _____ Remarks _____	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Deformation not evident
2.	Degradation Remarks _____	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Degradation not evident
I. Perimeter Ditches/Off-Site Discharge		<input type="checkbox"/> Applicable	<input type="checkbox"/> N/A
1.	Siltation Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Siltation not evident
2.	Vegetative Growth <input type="checkbox"/> Vegetation does not impede flow Areal extent _____ Type _____ Remarks _____	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A
3.	Erosion Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Erosion not evident
4.	Discharge Structure Remarks _____	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A
VIII. VERTICAL BARRIER WALLS		<input type="checkbox"/> Applicable	<input type="checkbox"/> N/A
1.	Settlement Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Settlement not evident
2.	Performance Monitoring Type of monitoring _____ <input type="checkbox"/> Performance not monitored Frequency _____ Head differential _____ Remarks _____		
		<input type="checkbox"/> Evidence of breaching	

IX. GROUNDWATER/SURFACE WATER REMEDIES <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A	
A. Groundwater Extraction Wells, Pumps, and Pipelines <input type="checkbox"/> Applicable <input type="checkbox"/> N/A	
1.	Pumps, Wellhead Plumbing, and Electrical <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> All required wells properly operating <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____ _____ _____
2.	Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____ _____
3.	Spare Parts and Equipment <input checked="" type="checkbox"/> Readily available <input type="checkbox"/> Good condition <input type="checkbox"/> Requires upgrade <input type="checkbox"/> Needs to be provided Remarks _____ _____ _____
B. Surface Water Collection Structures, Pumps, and Pipelines <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A	
1.	Collection Structures, Pumps, and Electrical <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____ _____
2.	Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____ _____
3.	Spare Parts and Equipment <input type="checkbox"/> Readily available <input type="checkbox"/> Good condition <input type="checkbox"/> Requires upgrade <input type="checkbox"/> Needs to be provided Remarks _____ _____ _____

IX. GROUNDWATER/SURFACE WATER REMEDIES		<input type="checkbox"/> Applicable	<input type="checkbox"/> N/A
A. Groundwater Extraction Wells, Pumps, and Pipelines		<input type="checkbox"/> Applicable	<input type="checkbox"/> N/A
1.	Pumps, Wellhead Plumbing, and Electrical <input type="checkbox"/> Good condition <input type="checkbox"/> All required wells properly operating <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____ _____ _____		
2.	Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____ _____		
3.	Spare Parts and Equipment <input type="checkbox"/> Readily available <input type="checkbox"/> Good condition <input type="checkbox"/> Requires upgrade <input type="checkbox"/> Needs to be provided Remarks _____ _____ _____		
B. Surface Water Collection Structures, Pumps, and Pipelines		<input type="checkbox"/> Applicable	<input type="checkbox"/> N/A
1.	Collection Structures, Pumps, and Electrical <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____ _____		
2.	Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____ _____		
3.	Spare Parts and Equipment <input type="checkbox"/> Readily available <input type="checkbox"/> Good condition <input type="checkbox"/> Requires upgrade <input type="checkbox"/> Needs to be provided Remarks _____ _____ _____		

C. Treatment System <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A	
1.	Treatment Train (Check components that apply) <input checked="" type="checkbox"/> Metals removal <i>plume</i> <input type="checkbox"/> Oil/water separation <input type="checkbox"/> Bioremediation <input checked="" type="checkbox"/> Air stripping <input type="checkbox"/> Carbon adsorbers <input checked="" type="checkbox"/> Filters <i>last step</i> <input type="checkbox"/> Additive (e.g., chelation agent, flocculent) <input type="checkbox"/> Others <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> Sampling ports properly marked and functional <input type="checkbox"/> Sampling/maintenance log displayed and up to date <input type="checkbox"/> Equipment properly identified <input checked="" type="checkbox"/> Quantity of groundwater treated <i>annually</i> <u>5x10⁶ gallons/day</u> <i>VOC treatment</i> <input type="checkbox"/> Quantity of surface water treated annually <u>9x10⁶ gallons/day</u> <i>average water distribution</i> Remarks _____
2.	Electrical Enclosures and Panels (properly rated and functional) <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks <u>appears to be</u>
3.	Tanks, Vaults, Storage Vessels <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Proper secondary containment <input type="checkbox"/> Needs Maintenance Remarks _____
4.	Discharge Structure and Appurtenances <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____
5.	Treatment Building(s) <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good condition (esp. roof and doorways) <input type="checkbox"/> Needs repair <input type="checkbox"/> Chemicals and equipment properly stored Remarks _____
6.	Monitoring Wells (pump and treatment remedy) <input checked="" type="checkbox"/> Properly secured/locked <input checked="" type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> All required wells located <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____
D. Monitoring Data	
1.	Monitoring Data <input type="checkbox"/> Is routinely submitted on time <input type="checkbox"/> Is of acceptable quality
2.	Monitoring data suggests: <input type="checkbox"/> Groundwater plume is effectively contained <input type="checkbox"/> Contaminant concentrations are declining

D. Monitored Natural Attenuation			
1.	Monitoring Wells (natural attenuation remedy) <input checked="" type="checkbox"/> Properly secured/locked <input checked="" type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input checked="" type="checkbox"/> All required wells located <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____ _____ _____		
X. OTHER REMEDIES			
If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.			
XI. OVERALL OBSERVATIONS			
A. Implementation of the Remedy			
Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <p><i>treatment of VOC-contaminated groundwater by air stripping.</i></p> <p><i>⇒ open solvent containers found in building where water is mixed and pumped to air stripper because painting building discussed this & told Mr. Spanel to remove solvent containers.</i></p> </div>			
B. Adequacy of O&M			
Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. _____ _____ _____ _____ _____ _____ _____ _____ _____			

C. Early Indicators of Potential Remedy Problems

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.

Operating Since 1986 - Designed for 5-year life expectancy
Replaced much of equipment
Engineering Evaluation of Stripping tower

D. Opportunities for Optimization

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

Will be addressed in report

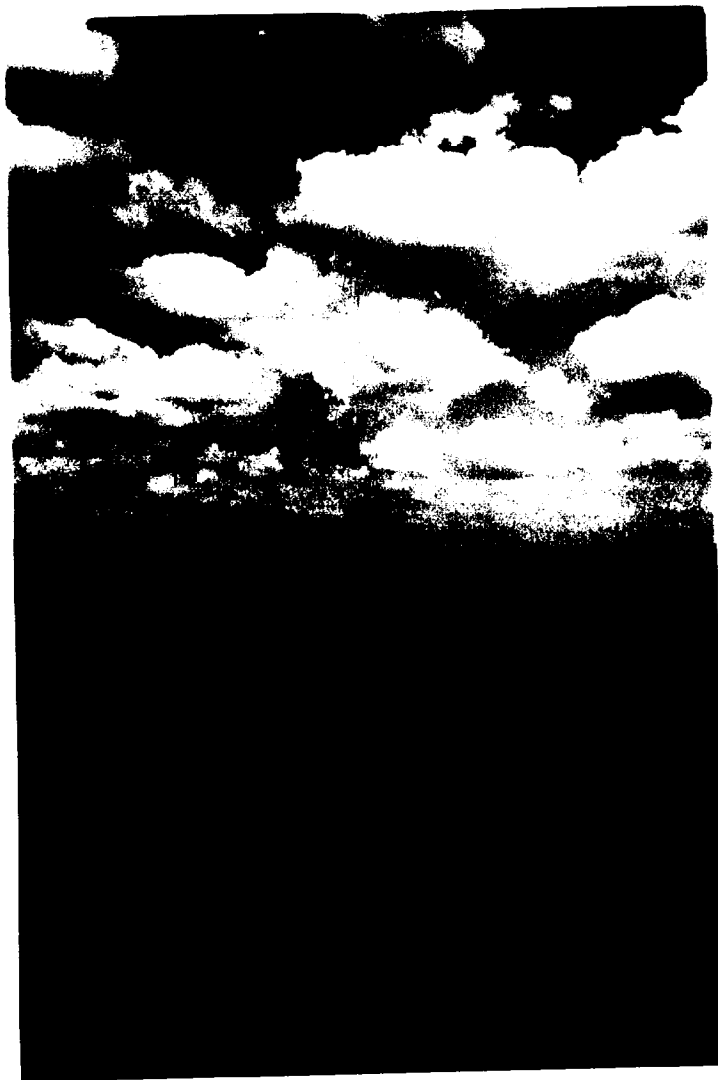
Could use well #19 as an interceptor well
(TCE in well #19); however may not be cost
effective to run piping to well #19

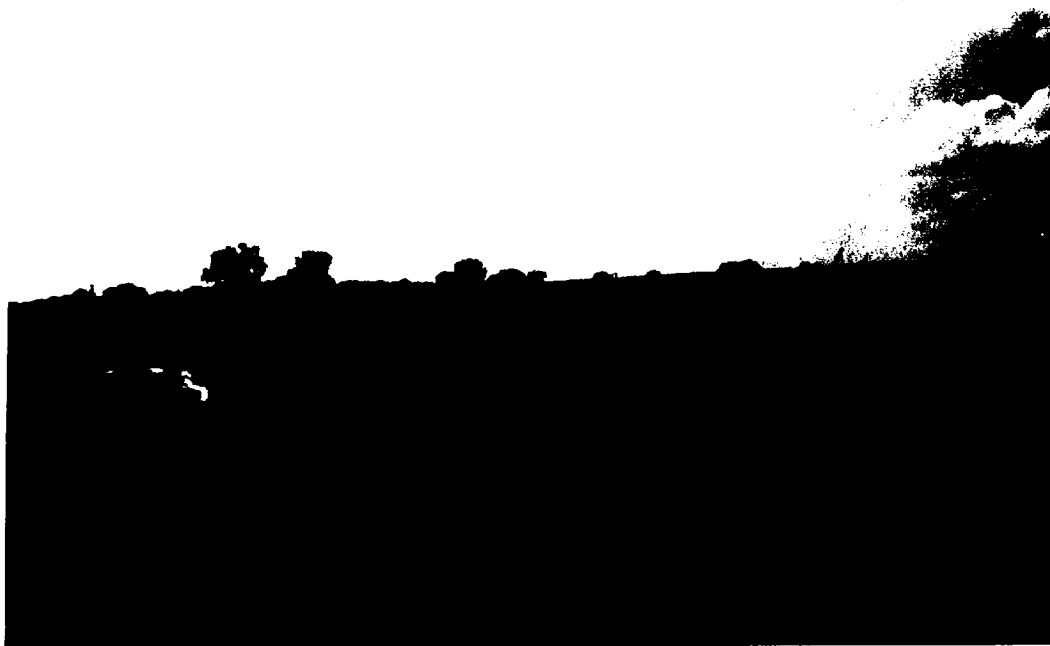
APPENDIX B
PHOTOGRAPHS FROM FIELD INSPECTION

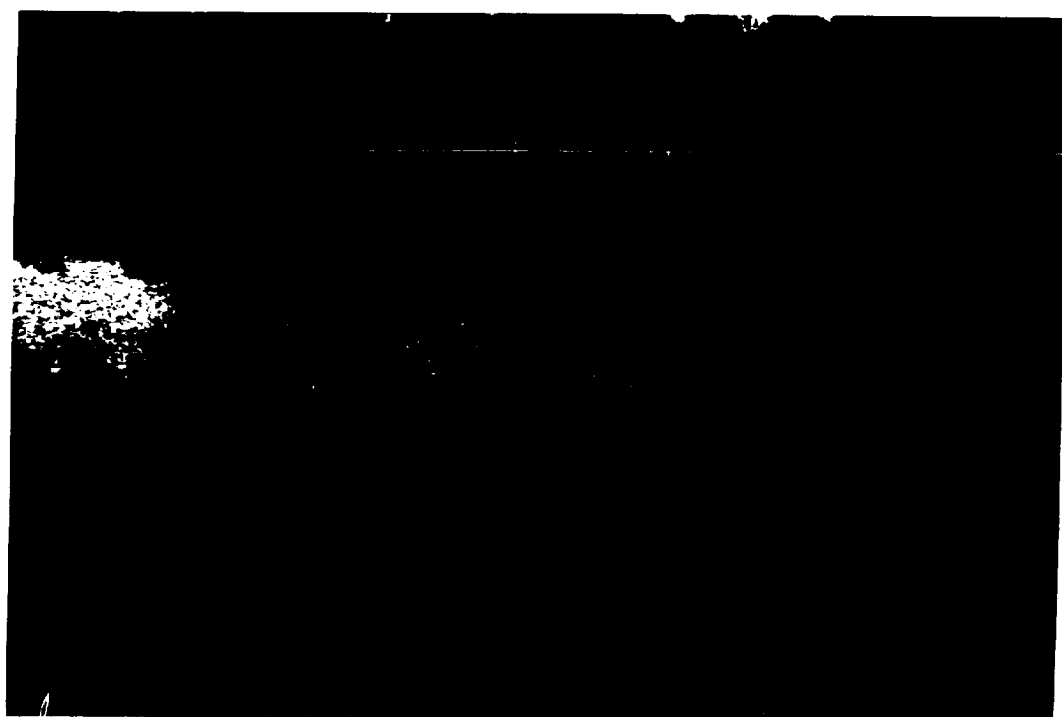
**NATIONAL PRESTO INDUSTRIES
EAU CLAIRE, WI
NATIONAL PRIORITIES LIST
SUPERFUND SITE**

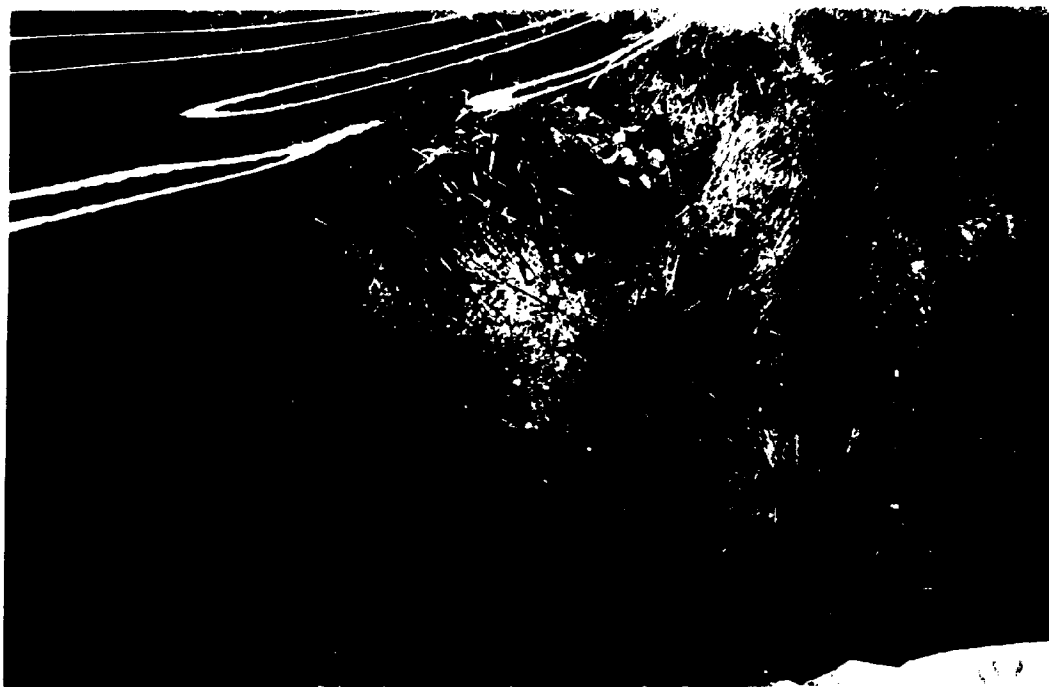


MELBY ROAD DISPOSAL SITE

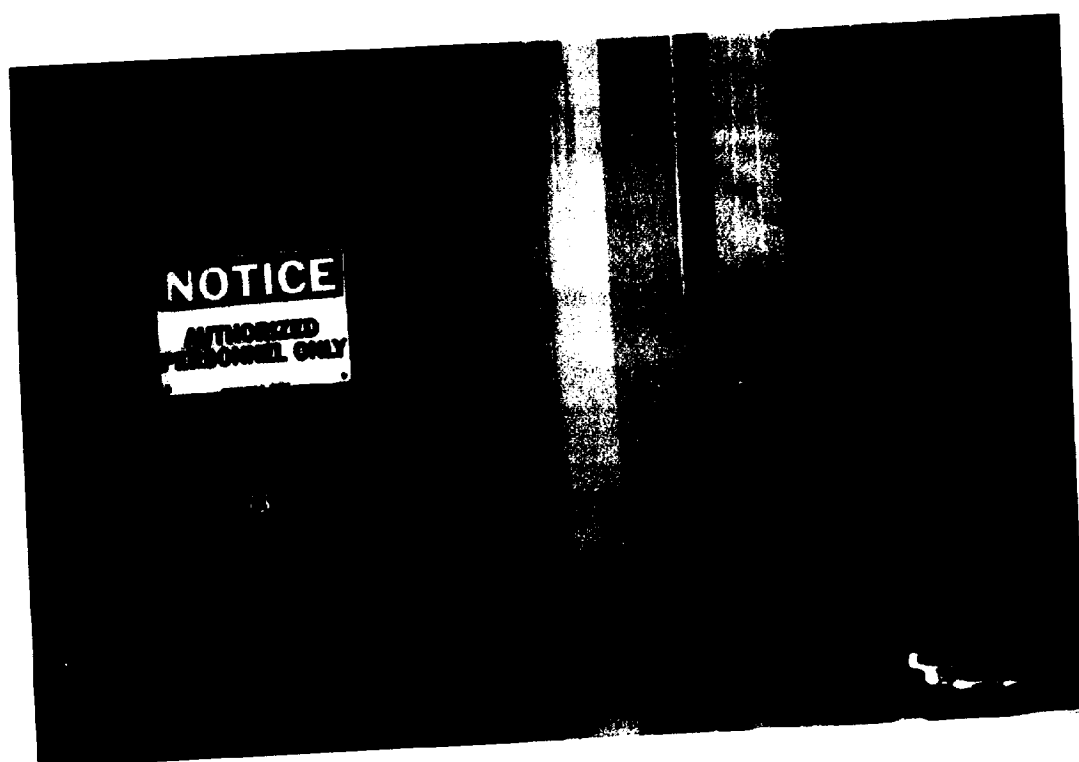
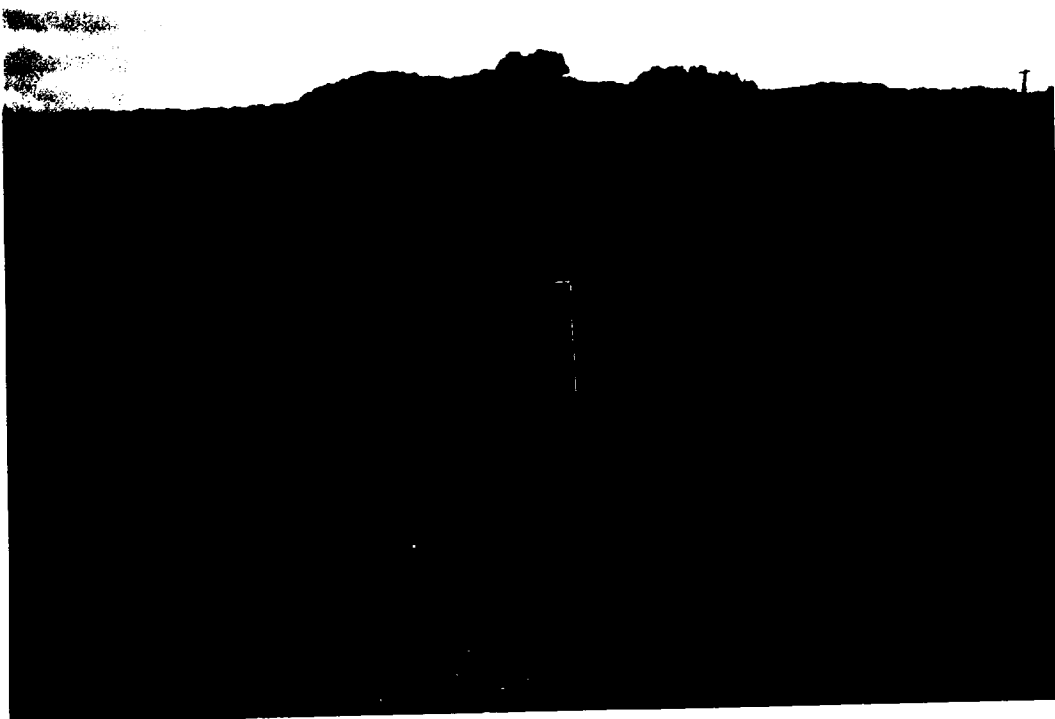




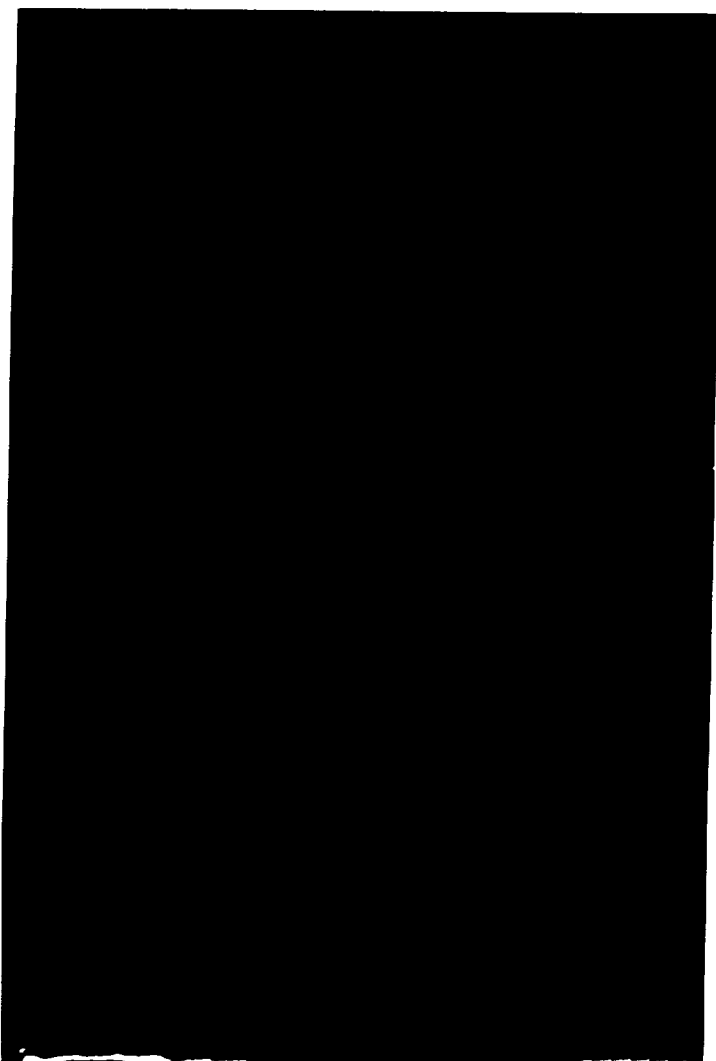
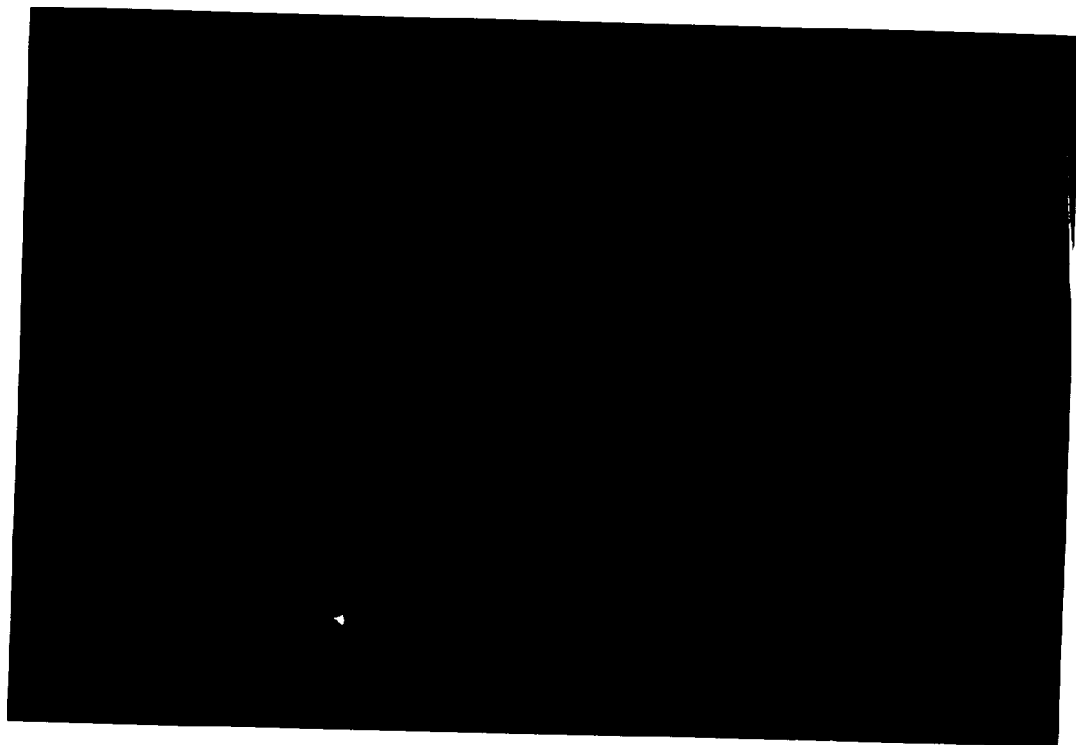


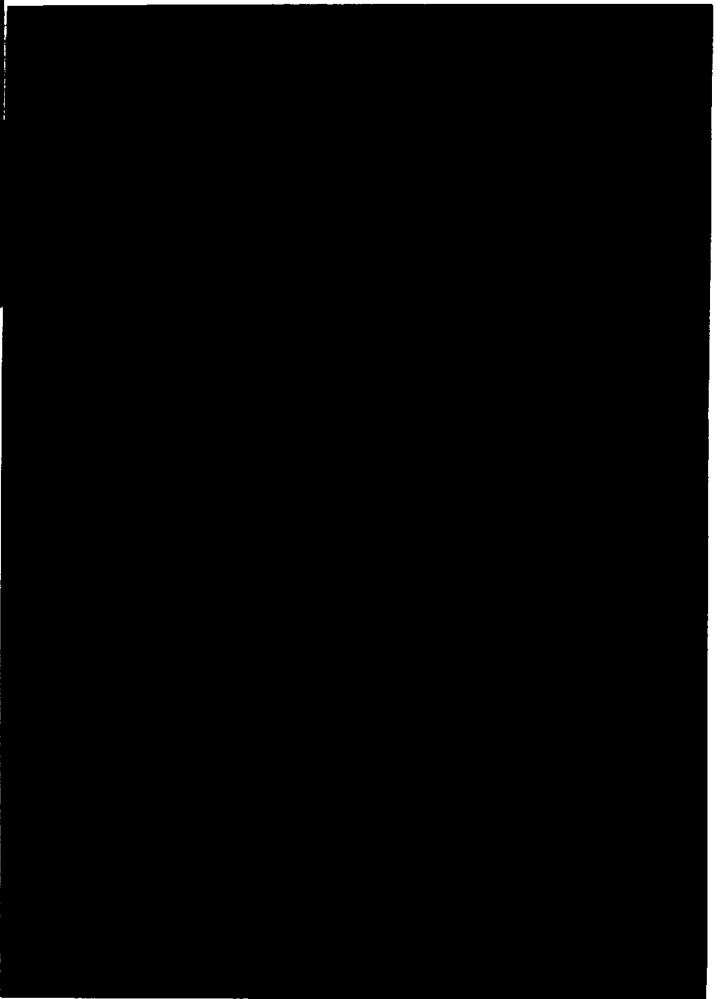
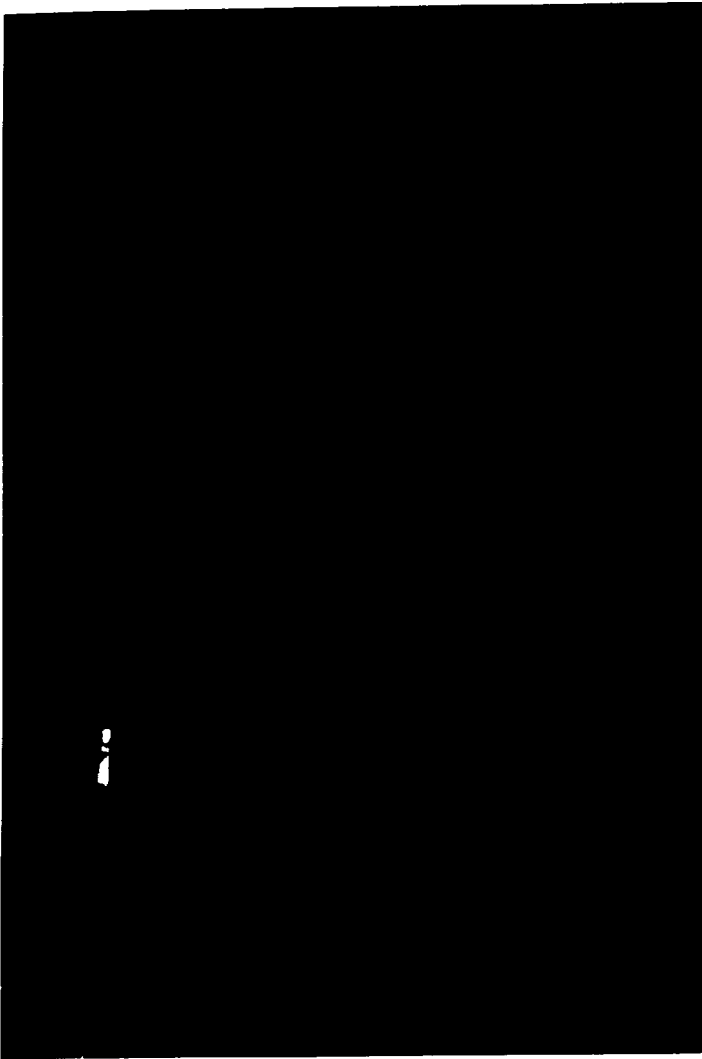


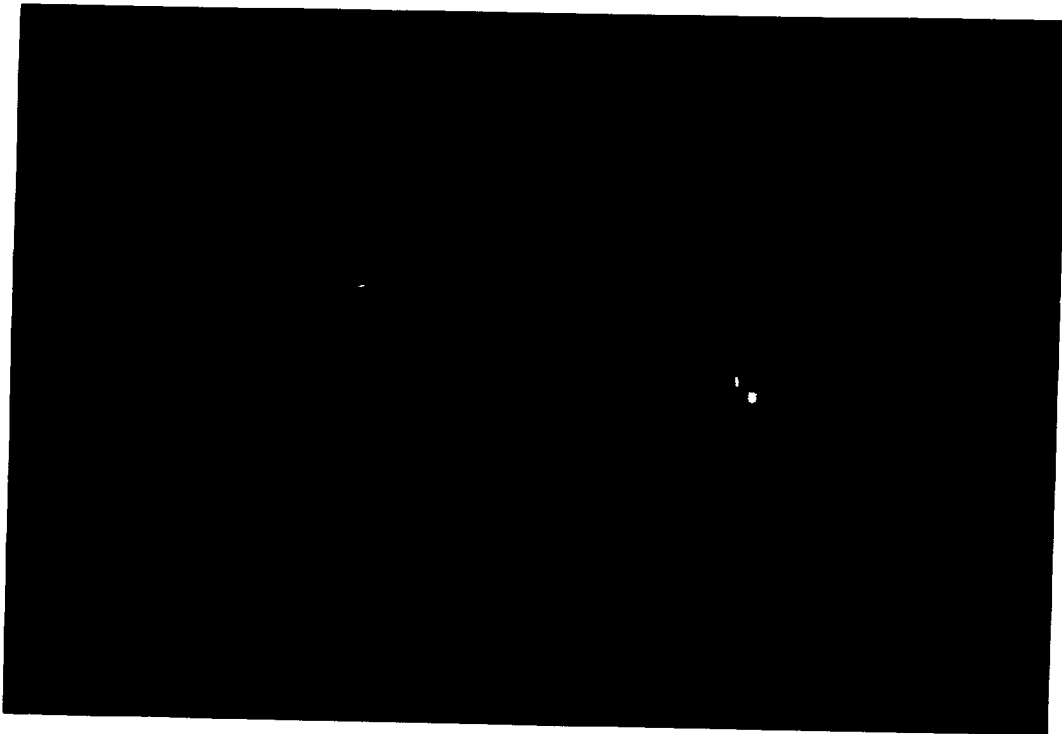
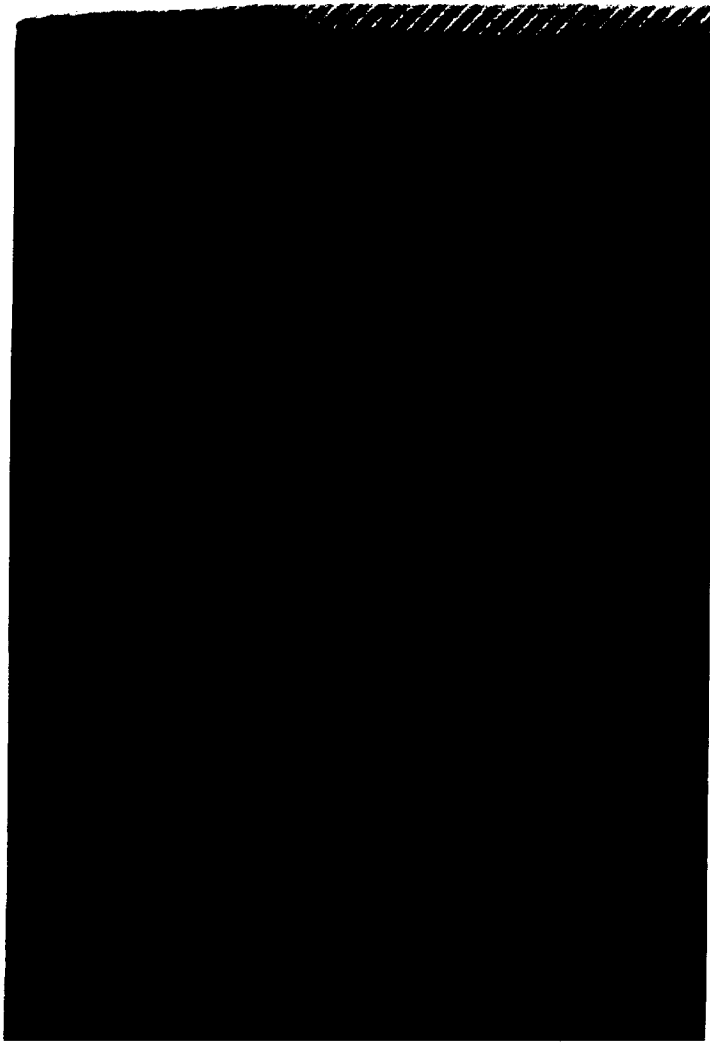
**EROSION AND BURROWS ARE EVIDENT
ON THE SOUTH SIDE**

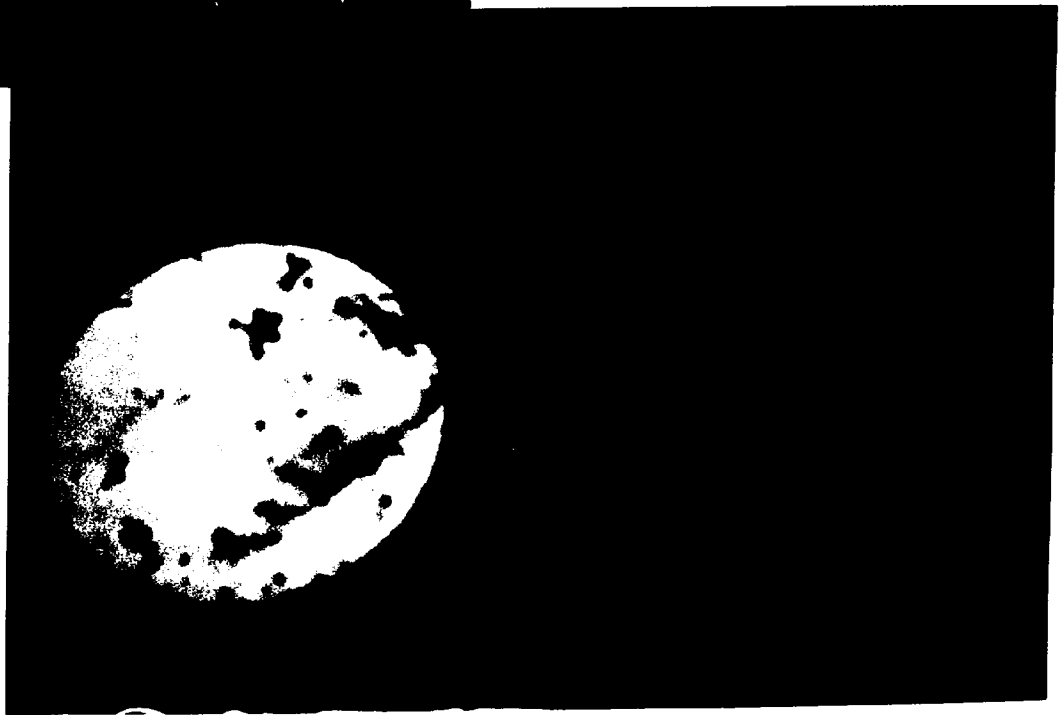


TREATMENT BUILDING









GROUNDWATER MONITORING WELLS

APPENDIX C

PRE-TREATMENT FACILITIES EVALUATION REPORT
OF THE VOC AIR STRIPPING TOWERS

PRETREATMENT FACILITIES EVALUATION

Of The
VOC STRIPPING TOWERS

Prepared For The



***City of
EAU CLAIRE***

Eau Claire & Chippewa Counties, Wisconsin

McMAHON
ASSOCIATES, INC.

ENGINEERS ■ ARCHITECTS
SCIENTISTS ■ SURVEYORS

October 18, 1999
McM. No. E002-97473.08
DJV:smd

PRETREATMENT FACILITIES EVALUATION

Of The
VOC STRIPPING TOWERS

Prepared For The



**City Of
EAU CLAIRE**

Eau Claire & Chippewa Counties, Wisconsin

Prepared By
McMahon Associates, Inc.
Neenah, Wisconsin

October 18, 1999
MCM. No. E002-97473.08

I. DESCRIPTION OF EXISTING FACILITIES

A. Introduction

The air stripping facility consists of two packed towers, process pumps and piping, two fan units, chemical feed facilities, and a pre-engineered metal building. The facilities were constructed in 1986 and put into operation in 1987. The facilities are located in the municipal well field approximately ½-mile northwest of the City of Eau Claire Water Treatment Plant.

The primary function of the air stripping facility is to remove Volatile Organic Compounds (VOC's) from the groundwater supplying the municipal wells. These organic compounds represent a contamination in the water supply that must be

PRETREATMENT FACILITIES EVALUATION
VOC Stripping Towers
City Of Eau Claire, Wisconsin

1. 1,1-dichloroethene (1,1-DCE)
2. Trichloroethene (TCE)
3. Tetrachloroethene (PCE)
4. 1,1-dichloroethane (1,1-DCA)
5. 1,1,1-trichloroethane (1,1,1-TCA)

The air stripping system was designed to achieve 99.3% removal of 1,1-DCE at a design concentration of 20 ppb and a flow rate of 11.2 mgd. 1,1-DCE was selected as the critical contaminant for design, since it requires the highest percentage of removal. Achieving the design removal efficiency for 1,1-DCE results in removal efficiencies that exceed those required for each of the other VOC's listed.

B. Process Description

In the air stripping process, contaminated well water is pumped to the top of the towers and distributed over a bed of loosely packed polypropylene media. As the water cascades down through the packed media, it breaks up into small droplets that provide a large air/water interface area for the transfer (volatilization) of the VOC's from the water to the air. Air is forced through the packing from the towers base to enhance this transfer of VOC's to the atmosphere. The treated water then collects in a sump in the tower base and is pumped to the Water Treatment Plant for further treatment prior to distribution.

The air stripping facility was designed to treat a total flow of 11.2 million gallons per day (mgd) from Well No.'s 11, 14, 15, 16 and 17. Well No. 10 can also be diverted to the stripping towers. Well No. 19 was constructed after the stripping tower was constructed, and also requires air stripping treatment. A 100 horsepower booster pump supplies additional pumping head to increase the flow rate from the wells to the top of the packed towers.

Treated water from the stripping towers is pumped by the tower effluent pumps to the Water Treatment Plant. The tower discharge piping is manifolded in such a way to allow the operation of either tower or both towers. A continuous chlorination system, using chlorine gas, is provided to maintain a chlorine residual in the tower to prevent any biological growth. A hypochlorite system is also available for shock chlorination, if necessary.

The air stripping process and the continuous disinfection of the raw water with chlorine causes the oxidation of some iron and manganese compounds, resulting in the formation of an insoluble precipitate in the tower media. An acid wash system is provided to remove the precipitate by circulating a mild solution (1 to 5%) of hydrochloric acid through the towers to loosen the precipitate. To date, the iron and manganese levels in the wells connected to the stripping towers have been low enough that precipitation has not been a problem.

C. Process Facilities

Following is a tabulation of the pertinent design criteria and equipment summary:

1. Stripping Towers

- a. Maximum Flow 11.2 mgd (7,800 gpm) Tower Diameter - 12-feet
- b. Maximum Loading Rate = 34 gpm/foot
- c. Removal Efficiency = 99.3% of 1, 1-DCE at 20 ppb at 50°F
- d. Tower Height = 60-feet, made of Fiberglass Reinforced Plastic
- e. Media Depth = 26-feet
- f. Media Volume = 2,942 ft³ for each tower

2. Tower Fans

- a. Two each, New York Blower
- b. Class II, Centrifugal Fans w/ Backward Inclined Airfoil Blades
- c. 17,500 cfm @ 4.3-inches Static Pressure
- d. 1,050 rpm, Belt Drive w/ 20 Hp, 1,800 rpm motor

3. Effluent Pumps

- a. Two each, Ingersoll-Rand
- b. Horizontal Split Case, Single Stage, Double Suction
- c. 100 Horsepower Variable Frequency Drive
- d. 8,500 gpm, 30-feet TDH, 880 rpm

4. Booster Pump

- a. One each, Ingersoll - Rand
- b. Horizontal Split Case, Single Stage, Double Suction
- c. 100 Horsepower Constant Speed
- d. 7,800 gpm, 35-feet TDH, 880 rpm

5. Chlorination System

- a. Two 150-pound Chlorine Gas Cylinders
- b. Capacity - 100 pounds per day per Chlorination
- c. Solution Feed Pump - Sta-Rite 1½ Hp. 7.5 gpm, 3,450 rpm

6. Acid/Hypochlorite Wash System

- a. One Recirculation Pump, Ingersoll-Rand
- b. End Suction Centrifugal, 1,000 gpm, 50-feet TDH, 25 Horsepower, 1,750 rpm, Fiberglass Construction
- c. Chemicals Added: Hydrochloric Acid (HCL), Caustic Sodium Hydroxide (NaOH) and Sodium Hypochlorite (Bleach)

7. Local Control Panel

- a. Programmable Controller for Process Control
- b. Various Instruments
- c. Automatic Telemetry Equipment For Remote Monitoring From Treatment Plant

The air stripping towers, tower fans and motors, tower sumps and tower piping are all constructed outdoor on a spread concrete slab 12" thick x 33' x 40". The process piping is protected by electrical heat tracing, fiberglass insulation and a metallic jacket.

The remainder of the process equipment and electrical/control equipment are housed in a 40' x 60' x 11'-11" pre-engineered metal building. The building was designed, manufactured and erected by Behlen Building Systems. The exterior building skin is standing seam galvanized panel, 22-gauge for the walls and 24-gauge for the roof. The building foundation is a concrete footing/foundation wall to frost depth, and a floating interior concrete slab. The interior of the building consists of exposed fiberglass blanket insulation covered with a 2-mil vinyl vapor barrier. The building is heated with electrical unit heaters. A small room with a separate, outside entrance houses the gas chlorinating equipment.

II. ASSESSMENT OF EXISTING FACILITIES

A. Background & Performance

Volatile organic compounds were first detected in Eau Claire's well water supply in 1981. The air stripping facility was completed in 1987, and was projected to

be in use for up to 5-years. It was anticipated that VOC levels would be reduced to below regulatory levels within 5-years.

However, even with continuous pumping from the contaminated wells, the concentration of VOC's in the upstream wells in the well field remain higher than acceptable limits. Concentrations of the five VOC's are measured in the contaminated wells several times each year. Table #1 summarizes original design VOC levels, design VOC removals resultant anticipated contaminant levels and averages of the actual 1997 concentrations. It can be seen from this table that contaminant levels exceed the target levels in Well No. 15 and Well No. 19. These two wells are the farthest north, and are thought to be the primary wells intercepting the contaminant plume coming from the north. While contaminant levels have dropped to acceptable levels in Well Nos. 11, 16 and 17, it remains high in the two wells that intercept the contaminant plume from the north.

For this reason, it appears the air stripping facilities will remain an essential component of the water treatment process for the City of Eau Claire for many years into the future. The north well field supplies a large percentage of the required water for the City.

Removal of VOC's in the air stripping tower is a function of water/air interchange in the tower. Adequate contact time between the up-flow air and the down-flow water is needed to completely strip the VOC's out of the water.

The air stripping facility was designed to provide adequate treatment for up to 11.2 mgd (7,800 gpm). The up-flow air blower system is capable of accomplishing slightly under a 50:1 air/water ratio (by volume) at this flow rate. Since only two wells currently show evidence of VOC contamination, it appears the stripping tower and associated process equipment are of adequate size to provide the necessary treatment for the Eau Claire water supply. Table #2 is a loading summary for the stripping towers.

B. Physical Plant Assessment

The original air stripping towers and mechanical equipment were originally designed and constructed with the assumption these facilities would be in service only 5-years. Materials and methods of construction selected were not conducive to long-term durability or life for this reason. In addition, certain operational features of the stripping facilities served the City adequately on a

Table #1

VOC REMOVAL PERFORMANCES
PRETREATMENT FACILITIES EVALUATION - VOC STRIPPING TOWERS
City Of Eau Claire, Wisconsin

Compound	Original Design Concentration (ppm)	Minimum Removal Efficiency	Target Level (ppb)	Well 11	Well 15	Well 16	Well 17	Well 19
1,1-DCE	0.020	99.3	0.14	ND	ND	ND	ND	0.8
TCE	0.035	99	0.35	ND	1.2	ND	ND	4.6
PCE	0.017	99	0.17	ND	ND	ND	ND	ND
1,1-DCA	0.010	98	0.2	ND	ND	ND	ND	1.2
1,1,1-TCA	0.88	97	5.6	ND	1.6	ND	ND	5.6

Table #2

STRIPPING TOWER LOADING SUMMARY
PRETREATMENT FACILITIES EVALUATION - VOC STRIPPING TOWERS
City Of Eau Claire, Wisconsin

Condition	Wells #	Flow Rate (mgd)	Loading Rate (gpm/ft ²)	Air / Water Ratio
Original Design	11, 15, 16, 17			
		6.2 mgd	19.0	61:1
Wells Currently Piped To Towers	10, 11, 14, 15, 16, 17, 19			
		10.6 mgd	32.6	36:1
Wells That Currently Exceed Contamination Standards	17, 19			
		2.8 mgd	17.2 ⁽¹⁾	67:1

⁽¹⁾ Assumes only one tower in service.

temporary basis; however, they are no longer viable for long-term, safe, cost effective operation.

The following is a listing of features that need to be upgraded to bring the existing air stripping facility from a temporary facility to a permanent facility intended to function for another 40-years:

1. Fiberglass Towers

- a. Design Life - 25-years.
- b. Exterior Gel Coat & UV Protector - 10-years.
- c. No footings to protect equipment from movement due to frost action.

2. Tower Piping & Fans

- a. No footings to protect against frost movement.
- b. Mechanical equipment, motors, and electrical equipment exposed to weather and deterioration.
- c. Exterior piping subject to freezing as foil jacket and insulation deteriorate.

3. Mechanical Building

- a. Pre-engineered metal buildings recognized as 15-year life.
- b. Roof system has 3-year warranty on finish, no warranty on water tightness or wind uplift.
- c. Wall panel paint finish life expectancy - 10-years. Repainting not viable option.
- d. Interior finish is exposed insulation with vinyl covering. Subject to mechanical damage, and not washable. This is not a permanent, durable, cleanable surface required for water treatment facilities.
- e. Insulation value of roof and wall system has a weighted R-value of only 9 to 10. This is no longer recognized as adequate by State standards.
- f. Exterior perimeter building insulation cover flashing is light gauge and showing signs of mechanical damage and failure.

4. Process Operation

- a. Daily changing of 150 lb. gas chlorine cylinders is labor intensive and unsafe. Current practice for gas chlorinating includes atomizing caustic scrubbers for control of gas venting to the atmosphere.

- b. The present telemetry system is no longer compatible with the master system being installed at the water treatment plant.
- c. Flow metering is needed for accurate pacing and dosage of chlorine.
- d. Exterior piping at tower base limits flexibility for chemical feed addition (locations).
- e. Control equipment does not allow for accurate pacing of chlorine into the system, or monitoring of flow rates through tower.
- f. There are no means to bypass uncontaminated well water from Well Nos. 10, 16 and 17 around the tower when Well Nos. 15 and 19 are in operation.

In general, the existing process water piping, booster pump, effluent pumps, and valves are of adequate quality and are properly installed to provide long-term service to the City. Also, the electrical power facilities and general building electrical and control facilities are well designed and properly constructed. There appears to be adequate facility space in the mechanical building to provide safe and efficient maintenance of all of the equipment in the building, and there are no apparent code compliance issues in the facility that must be corrected. The stripping towers appear to have been properly designed using appropriate criteria for wind load and hydrostatic forces.

III. Required Facility Upgrades

Six major improvements need to be made to the existing facilities to make them acceptable for long-term, reliable and safe operation:

- A. The fiberglass stripping tower needs to be gel-coated to prevent ultraviolet (UV) deterioration and weathering, and to extend the life up to 25-years. They will, therefore, need to be replaced or rehabilitated again in approximately 15-years, unless deterioration appears sooner.
- B. A building should be constructed around the base of the stripping towers to house the fans, motors, electrical equipment, instrumentation and piping. This should also include the tower support slab, so it is not exposed to frost movement.
- C. The pre-engineered metal building should be replaced with a more permanent structure, such as masonry or precast concrete. A permanent building will be

more energy efficient, and will have durable (cleanable) surfaces for long life and low maintenance service.

- D. The use of 150 lb. cylinders of chlorine gas should be replaced with a safer system; either using 1-ton chlorine gas cylinders and a scrubber system or bulk storage of liquid sodium hypochlorite.
- E. Process instrumentation needs to be added to allow metering of well water flow through the towers, flow pacing of chlorine addition, and remote telemetering from the Water Plant.
- F. Additional transmission main should be installed to allow bypassing of the stripping tower from Well Nos. 11, 16 and 17, while Nos. 15 or 19 are in operation. There are no longer detectable levels of VOC's in Well Nos. 11, 16 and 17, and they no longer require pretreatment in the towers.

IV. DISCUSSION OF FACILITY UPGRADE OPTIONS

A. Replacement Of Fiberglass Stripping Towers

Future deterioration of the fiberglass towers could be addressed in one of two ways:

Option #1: Replace the existing towers with new towers that, with proper maintenance, could last another 30 to 40-years.

Option #2: Gel-coat the existing towers to extend their life another 10 to 15-years, and establish a replacement fund to be able to replace or rehabilitate the towers in 15-years.

It is recommended that Option #2 be selected. Fiberglass is the preferred material of construction for VOC stripping towers, as it resists corrosion due to the internal wet environment and external exposure to the weather. The existing towers appear to be in good condition, and have been designed according to appropriate building criteria for wind load and structural performance.

A cost estimate for gel-coating the tower and providing for replacement in 15-years follows:

Gel-coat Towers	.....	\$10,000
Tower Replacement - 15-years	.....	66,000
Future Cost	\$200,000	
Discount Rate	7 5/8%	
Engineering & Contingencies	.....	<u>20,000</u>
Total Present Cost	.....	\$96,000

B. Chlorination System

Two options were considered for chlorination system improvements: 1-ton gas cylinders and bulk liquid sodium hypochlorite. Following is an abbreviated cost comparison between these two options:

Gas Ton Cylinders

Chlorine Equipment	\$50,000	
Chlorine Scrubber	120,000	
Building Addition	<u>50,000</u>	
Total	.....	\$220,000

Bulk Liquid Sodium Hypochlorite

Tanks & Feed Equipment	\$20,000	
Building Addition	<u>25,000</u>	
Total	.....	\$45,000

For obvious cost reasons, it is recommended to install the facilities for storing and feeding liquid sodium hypochlorite.

C. Building Replacement

The next three recommended items, including a building around the outside fans and motors, replacement of the mechanical building and a new chlorine feed facility, can be addressed with the construction of a single new masonry building. The new building would utilize the same foundation walls as the existing pre-engineered building. It would be extended to surround the stripping tower area to enclose the piping and fans. The new building addition would also be large enough to house replacement chlorination process equipment needed to provide a safe operation. The stripping towers would extend out the top of the new building.

Figure #1 is a layout of the proposed masonry process building. Sufficient space has been allowed for storage of 8,000 gallons of hypochlorite, enough for an average of 3-months usage. Stairs are necessary because the base slab at the stripping towers is 2'-3" higher than the existing building floor. The roof would be common elevation for the entire new structure, and would have a ceiling height of 16-feet around the stripping tower and 13'-9" in the process building. The roof would be of precast concrete construction with steel framing, as needed, around the stripping towers. Roof access would be provided for maintenance access to the stripping tower access ladders. The building and the towers would be kept heated to at least stay above freezing and to prevent condensation on the towers. Fresh air for the tower fans would be drawn from the outside directly into the fans.

Table #3 is a preliminary cost estimate for the building replacement/addition. Also included are the necessary instrumentation/control improvements recommended in Paragraph II.,B. of this report.

D. Bypass Piping

Figure #2 is a site plan showing recommended piping modifications to allow bypassing of the stripping towers from Well Nos. 11, 16 and 17. These three wells have shown non-detect levels of VOC's for the past few years and do not need to be treated with pre-chlorination and air stripping. Currently, these three wells share a common transmission main with contaminated Well Nos. 15 and 19. Unnecessary treatment through the stripping tower currently costs the City approximately \$15/million gallons.

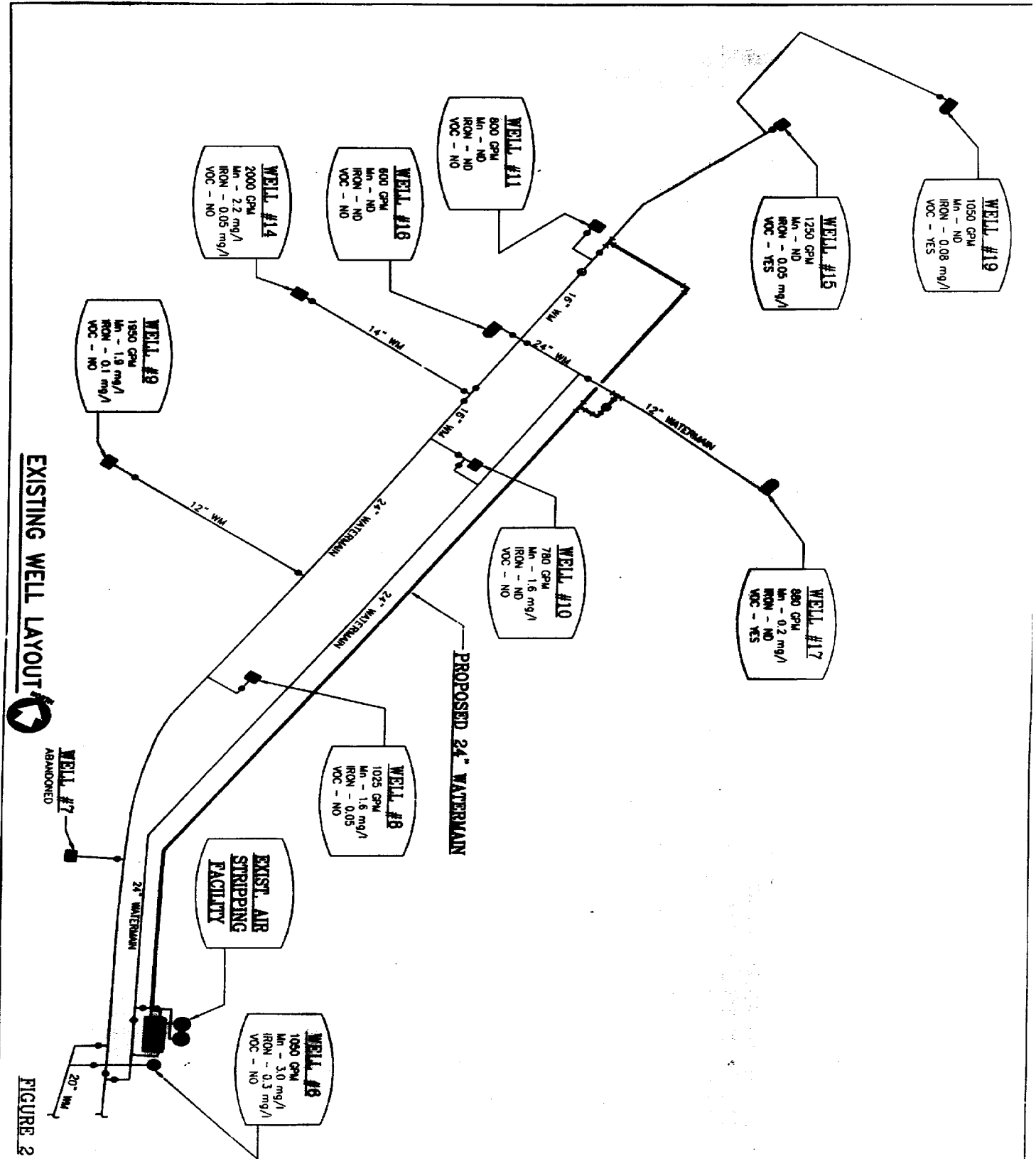
Following is a preliminary cost estimate for the recommended well piping / valve bypass line:

12" Pipe - 75 feet	\$6,000
12" Valve & Fittings	5,000
24" Pipe - 1,800 feet	153,000
16" Valve	3,000
24" Fittings	<u>5,000</u>
Subtotal	\$172,000
Engineering & Contingencies	<u>\$43,000</u>
Total	\$215,000

Table #3

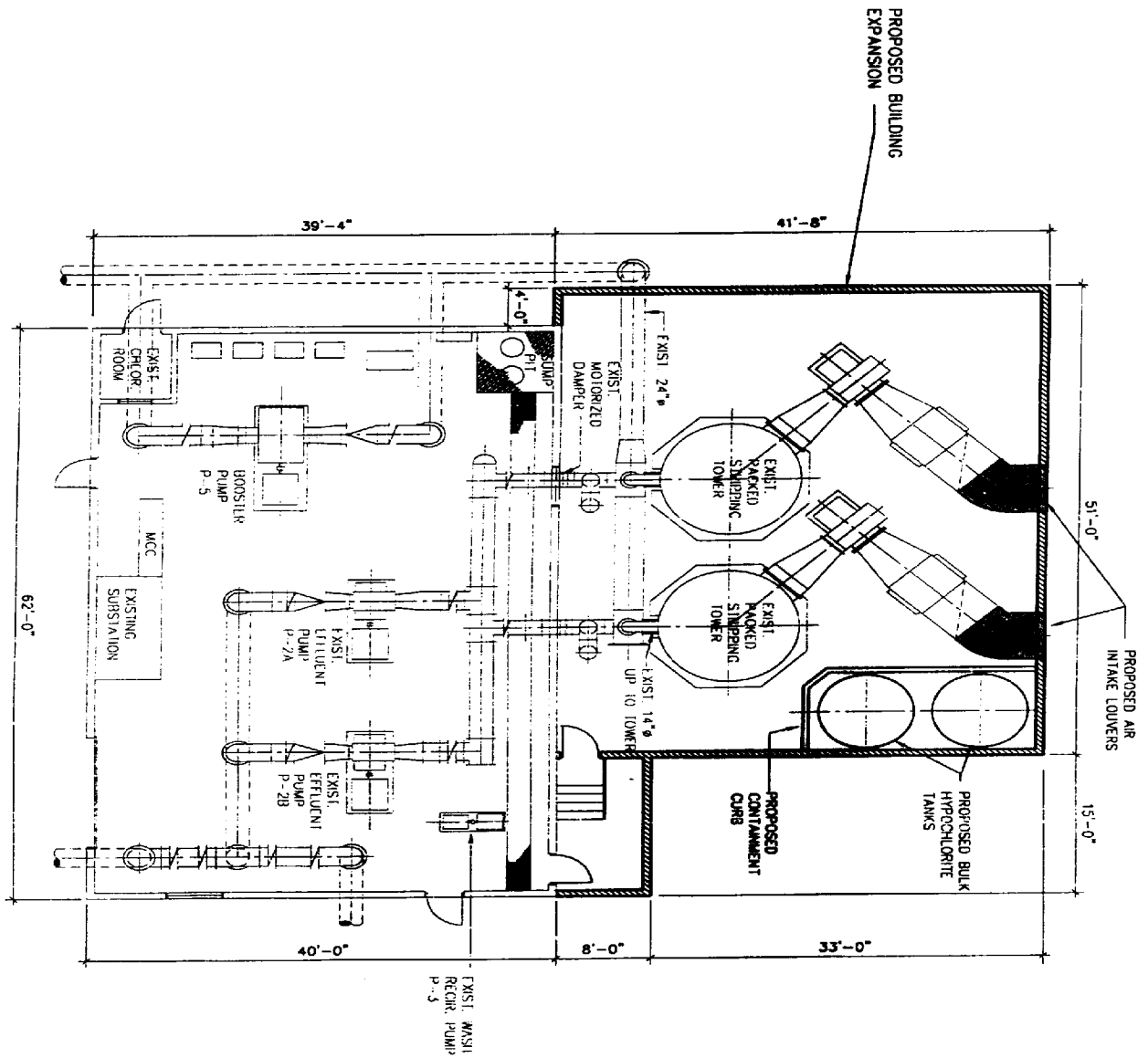
PROCESS MECHANICAL BUILDING REPLACEMENT
PRETREATMENT FACILITIES EVALUATION - VOC STRIPPING TOWERS
City Of Eau Claire, Wisconsin

Description	Cost Estimate
General Conditions	\$59,700
Site Work	38,700
Concrete	38,750
Masonry	49,500
Metals & Structural Framing	18,100
Wood	1,200
Thermal / Moisture Protection	30,400
Doors / Windows	10,500
Finishes / Painting	30,900
Plumbing	10,000
Heating & Ventilating	15,000
Electrical	25,000
Instrumentation / Controls Additions	10,000
Subtotal	\$338,000
Engineering & Contingencies	\$85,000
TOTAL	\$423,000



EXISTING WELL LAYOUT

FIGURE 2



FLOOR PLAN
SCALE: 3/32" = 1'-0"

FIGURE 1

**AIR STRIPPING FACILITY
EAU CLAIRE MUNICIPAL WELL FIELD
EAU CLAIRE, WI.**

DESIGNED
DUV
DRAWN
RHM
CHECKED

McMahon Associates, Inc. is a professional engineering firm providing a full range of engineering services. The firm is a member of the Wisconsin Professional Engineers Association, Inc. The firm's services include: design, construction management, and engineering consulting. The firm is located at 1445 McMahon Drive, Neenah, WI 54956. The firm's telephone number is 920-751-4700. The firm's fax number is 920-751-4701. The firm's e-mail address is info@mcMahon.com.

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Mailing Address:
P.O. Box 1025 Neenah, WI 54957-1025
TEL: 920-751-4700 FAX: 920-751-4701

SCALE
AS NOTED
DATE
SEPT., 1999
PROJECT NO.
5002-97473 C2

SHEET NO.

Table #4 is a summary of all of the preliminary costs developed for the required improvements developed in this facility evaluation. Also shown in Table #4 is a present worth evaluation of the estimate \$40,000/year operating cost for the facility (\$20,000 chemicals, \$20,000 electrical power).

IV. CONCLUSIONS

Improvements to the stripping tower facilities are necessary to allow for long-term, reliable and safe operation. These facilities are necessary to provide a safe water supply for the City of Eau Claire until such time as the groundwater in the well field is declared contaminant free.

A summary of the cost of these improvements is provided in Table #4. The total cost of the recommended improvements is \$758,000.

DJV:smd
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Table #4

RECOMMENDED IMPROVEMENT SUMMARY
PRETREATMENT FACILITIES EVALUATION - VOC STRIPPING TOWERS
City Of Eau Claire, Wisconsin

Description	Cost Estimate
Tower Upgrade & Replacement	\$76,000
Sodium Hypochlorite Equipment	20,000
Building Replacement	338,000
Well Bypass Piping	172,000
Subtotal	\$606,000
Engineering & Contingencies	\$152,000
TOTAL	\$758,000

Estimated Annual Chemical and Operating Costs	\$40,000/year
Total Present Worth of Annual O & M, 20 years, 7-5/8%	\$403,000

APPENDIX A

COST ESTIMATE BACK-UP INFORMATION

COST ESTIMATE WORK SHEET

McMAHON ASSOCIATES, INC.
CONSULTING ENGINEERS
NEENAH, WI 54956

CLIENT: _____ DATE: _____
PROJECT: _____ BY: _____
PROJECT No _____ PAGE _____ OF _____

[illegible]

SUB - TOTAL 9377,000

COST ESTIMATE WORK SHEET

McMAHON ASSOCIATES, INC.
CONSULTING ENGINEERS
NEENAH, WI 54956

CLIENT: _____ DATE: _____
PROJECT: _____ BY: _____
PROJECT No. 2014 PAGE _____ OF _____

Division 1 - General Requirements

[illegible]

SUB - TOTAL \$ 59,700

COST ESTIMATE WORK SHEET

McMAHON ASSOCIATES, INC.
CONSULTING ENGINEERS
NEENAH, WI 54956

CLIENT: _____ DATE: _____
PROJECT: _____ BY: _____
PROJECT No. _____ PAGE _____ OF _____

DIVISION 3 - CONCRETE & PRECAST

[illegible]

SUB - TOTAL \$38,750

McMAHON ASSOCIATES, INC.
CONSULTING ENGINEERS
NEENAH, WI 54956

CLIENT: _____ DATE: _____
PROJECT: _____ BY: _____
PROJECT No. _____ PAGE _____ OF _____

[illegible]

SUB - TOTAL \$ 49,500

COST ESTIMATE WORK SHEET

McMAHON ASSOCIATES, INC.
CONSULTING ENGINEERS
NEENAH, WI 54956

CLIENT: _____ DATE: _____
PROJECT: _____ BY: _____
PROJECT No. _____ PAGE _____ OF _____

DIVISION 5- METALS

[illegible]

SUB - TOTAL 518,100

COST ESTIMATE WORK SHEET

McMAHON ASSOCIATES, INC.
CONSULTING ENGINEERS
NEENAH, WI 54956

CLIENT: _____ DATE: _____
PROJECT: _____ BY: _____
PROJECT No _____ PAGE _____ OF _____

Division 6- Wood

[illegible]

SUB - TOTAL _____

COST ESTIMATE WORK SHEET

McMAHON ASSOCIATES, INC.
CONSULTING ENGINEERS
NEENAH, WI 54956

CLIENT: _____ DATE: _____
PROJECT: _____ BY: _____
PROJECT No. _____ PAGE _____ OF _____

Division 7- Thermal/Moisture Protection

[illegible]

SUB - TOTAL \$ 30,400

COST ESTIMATE WORK SHEET

McMAHON ASSOCIATES, INC.
CONSULTING ENGINEERS
NEENAH, WI 54956

CLIENT: _____ DATE: _____
PROJECT: _____ BY: _____
PROJECT No. _____ PAGE _____ OF _____

Division 8- Doors & Windows & Division 9- FINISHES

[illegible]

SUB - TOTAL _____

APPENDIX D

**WDNR CONCURRENCE TO REQUESTS FOR
NO FURTHER REMEDIAL ACTION OF SOIL**

*Letters to be
provided by
WDNR*